STATE OF MAINE
MAINE REVENUE SERVICES

PT 101

Introduction to Property Tax Assessment

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INTRODUCTION

Purposes of the Course

1. Provide interested persons with an overview of the assessing profession; and

2. Instruct persons preparing for positions in assessment in the basic elements of assessment practice.

Student Goals

1. Learn the basic elements of the assessment profession.

2. Gain sufficient knowledge to continue in more detailed subjects of assessment practice.

3. Learn basic information concerning property taxation that will assist in a study of property tax law.

Basic Principles

The Maine Constitution is separate from the set of laws called the Maine Revised Statutes (abbreviated M.R.S.). The Constitution is the framework of law that covers all of state law. The Maine Revised Statutes – and specifically Title 36 (Taxation) – are a separate body of laws that augment constitutional law, applying property tax details for Maine municipalities.

1. The Maine Constitution

    a. Article I, Section 22. "No tax or duty shall be imposed without the consent of the people or of their representatives in the Legislature."

    b. Article IX, Section 7. "While the public expenses shall be assessed on estates, a general valuation shall be taken at least once in 10 years."

    c. Article IX, Section 8. "All taxes upon real and personal estate, assessed by authority of this State, shall be apportioned and assessed equally according to the just value thereof.

1. Intangible property. The Legislature shall have power to levy a tax upon intangible personal property at such rate as it deems wise and equitable without regard to the rate applied to other classes of property.

2. Assessment of certain lands based on current use; penalty on change to higher use. The Legislature shall have power to provide for the assessment of the following types of real estate whenever situated in accordance with a valuation based upon the current use thereof and in accordance with such conditions as the Legislature may enact:

A. Farms and agricultural lands, timberlands and woodlands;

B. Open space lands which are used for recreation or the enjoyment of scenic natural beauty;

C. Lands used for game management or wildlife sanctuaries; and

D. Waterfront land that is used for or that supports commercial fishing activities."

d. Article IX, Section 9. "The Legislature shall never, in any manner, suspend or surrender the power of taxation."

2. Interpreting the Maine Constitution. These statements in the Maine Constitution mean to us:

a. The Legislature is given the power of taxation. The Legislature passes laws that become our tax statutes.

b. The power of taxation may not be surrendered by the Legislature. The Legislature may not give the municipalities the authority to develop local tax laws.

c. The courts will require, as upholders of the constitution, that all taxation shall be fair. The appeal rights of taxpayers may call the fairness of any tax into question and the final determination of that fairness will be in the hands of the courts.

d. Just value is equal to market value. Municipalities must assess according to just value, not necessarily at just value.

3. Statutory Requirements

a. Title 36, Maine Revised Statutes , section 502 (36 M.R.S. § 502) states, in part:

"All real estate within the State, all personal property of residents of the State and all personal property within the State of persons not residents of the State is subject to taxation on the first day of each April as provided; and the status of all taxpayers and of such taxable property must be fixed as of that date."

b. 36 M.R.S. § 701-A – Just Value Defined.

"In the assessment of property, assessors in determining just value are to define this term in a manner that recognizes only that value arising from presently possible land use alternatives to which the particular parcel of land being valued may be put. In determining just value, assessors must consider all relevant factors, including without limitation the effect upon value of any enforceable restrictions to which the use of the land may be subjected including the effect on value of designation of land as significant wildlife habitat under Title 38, section 480-BB, current use, physical depreciation, sales in the secondary market, functional obsolescence and economic obsolescence. Restrictions include but are not limited to zoning restrictions limiting the use of land, subdivision restrictions and any recorded contractual provisions limiting the use of lands. The just value of land is determined to arise from and is attributable to legally permissible use or uses only."

Taxation

Tax is defined as a compulsory contribution imposed by law for the support of government without regard for individual benefit. There are three basic types of tax – this applies everywhere.

1. Tax on the creation of wealth: Income taxes, capital gains taxes.

2. Tax on the exchange of wealth: Sales taxes, some excise taxes, inheritance and estate taxes.

3. Taxes on the possession of wealth: Property taxes in their many forms, personal property, real property, some excise taxes.

Of the three types, property tax is by far the oldest. It is also the primary source of revenue for municipalities. Property tax is unique in that it is the only tax that is predetermined. This means that a municipality decides on a budget for the year and then the property tax rate is adjusted so that it will generate the predetermined budget amount. For Income tax and sales tax, the rate is established and the revenue generated from those taxes fluctuate based on how much taxpayers earn or spend.

The purposes of taxation are to fund the efforts of government at its many levels in meeting public needs. The power to tax, police power and the power of eminent domain are the tools of government that attempt to fairly distribute public expenditures on the population.

Government has the following powers:

1. Police power. The capacity to enforce order for the benefit of the public safety and welfare.

2. Tax power. The power to impose and collect taxes.

3. Power of eminent domain. The power to take private property for public use.

4. The power of escheat. The power to claim title to property of a decedent with no will and no heirs.

Appraisals

1. An appraisal is an opinion of value; it is an estimate, based on integrity and competence of the assessor and soundness and skill with which the available data is processed. This will be further discussed in Chapter 3.

2. The appraisal process is a systematic, logical method of collecting, analyzing, and processing data into value estimates for an individual property. Each appraisal will have a purpose that defines the value to be found.

    a. Market value. This is the value that a property has in the marketplace. Generally, this is the price at which a property would sell and is prepared for purposes such as obtaining a bank loan that will use the property as collateral.

    b. Insurance value. This is the value of property for insurance purposes, usually the replacement value if the property is destroyed.

    c. Estate value. This is the value of property for purposes of the estate tax.

d. Other values.

3. By contrast assessment, or mass appraisal, is a process by which all of the taxable property in a municipality is valued. In this process, each property must be equitably valued in such a way that that each individual property bears its fair share of the expenses of the municipality. Assessed value must be fair in relation to the assessed value of other property in the municipality

4. Whether preparing an individual property appraisal or a mass appraisal, the values obtained will be determined by the following elements.

   a. Economic climate (principles of value).

   b. Sales history.

   c. Topography and land use.

The Municipality – An Overview

1. Makeup of various government types.

   a. Selectmen.

   b. Town Manager.

   c. Town meeting or City Council.

2. Discuss the duties of Municipal officials as they relate to Property Taxation.

   a. Municipal officers.

   b. Tax collector.

   c. Municipal assessor.

3. The minimum qualifications for all municipal officials including municipal assessors are:

   a. 18 years of age.

   b. Citizen of the United States.

c. Resident of the State of Maine.

d. Must be legally elected (or appointed) and sworn in.

e. An assessor, if also a selectman, must be a resident of the municipality.

4. At the town meeting.

a. Town meetings are held at various times depending on a calendar or fiscal year adopted by a municipality. Most are held in February or March to give ample time for any budgetary adjustments before taxes are committed (most municipalities commit taxes between July and October. The town meeting determines the municipal financial needs in time for the assessors to value property and the tax collector to prepare and send tax bills for that year.

b. The Town Meeting will also act to choose the assessor who will provide the valuation services of the town.

(1) Selectmen to act as assessors.

(2) Elect a separate Board of Assessors.

(3) Vote to appoint a professional assessor.

(4) Appointed assessor/agent to act with the elected Board of Assessors.

5. City elections.

a. Assessors are chosen on the second Monday in March for one year unless the city charter states otherwise.

b. The city council may provide for a single assessor with powers the same as in towns and appointed for a term not exceeding five years.

Course Outline

During this course you will be introduced to the work of a municipal assessor. This course is in no way comprehensive, but will offer you an overview of many assessor duties and responsibilities. The municipal assessor is an administrative officer, chosen by the municipality, but under the general supervision and control of the State Tax Assessor in the performance of his or her duties. The assessor is responsible for establishing the value of all property for “ad valorem” purposes. Ad valorem is a legal

term meaning according to value. An ad valorem tax is one that is based on the value of an item. Property tax is one of the main examples of an ad valorem tax.

There is confusion among taxpayers as to the duties and responsibility of tax assessors. Many taxpayers believe that the tax assessor is responsible for the increase or decrease in the taxes that they must pay. This is not so. An assessor applies the value of property. The tax increases or decreases primarily because of a change in the municipal budget from year to year.

Assessors must also find equality and fairness between different kinds of property in the municipality. In theory there should be no difference between properties appraised individually by a fee appraiser and a mass appraisal performed by an assessor. In practice, though, we shall see that the methods used by an assessor have more than the one function of determining market value. Municipal assessors are charged with the following major duties:

1. Discover and value all taxable and exempt real and personal property.

2. Administer taxpayer benefit programs.

3. Maintain accurate tax maps of the land in the municipality.

4. Create and maintain property records.

5. Set an annual tax rate.

6. Maintain assessor certification through annual education requirements.

CHAPTER 1

PROPERTY AND PROPERTY RIGHTS

The Nature of Property

The average person thinks of property as being a thing. Property is actually a right, or interest, of a person to possess, use, enjoy, and dispose of a thing. Generally speaking, property expresses a relationship between people and their rights in and to possessions. All property is divided into two categories, real property and personal property.

Real Property

Real property is the rights connected with real estate (land and most improvements to land). Real estate is the physical land and everything permanently attached to it. In practice, however, people tend to use the terms “real estate” and “real property” interchangeably. Land is characterized by its immobility, indestructibility, uniqueness, and scarcity. Land use and value, however may change as land is modified. There are two categories of real estate:

1. Land - The surface of the earth with everything under and over its boundaries to the center of the earth as well as the sky over it.

Example: If an industrial plant lets smoke pass over an adjacent property, substantially interfering with the use of that property, that pollution can be called a nuisance trespass and can be abated.

2. Improvements - Buildings and other structures, paving, fencing, fixtures, and landscaping affixed to, and becoming part of the real estate. Most improvements are considered real estate, but some are personal property.

Fixtures are items of personal property that have been attached to land or other real estate, becoming part of that real estate. To determine whether or not personal property is a fixture, we need to determine the manner of attachment and the adaptation of the item to the property as a whole.

For example, if there is a pile of bricks on a landowner’s property, those bricks are considered personal property. If, however, those bricks are stacked to form a wall, that wall becomes a fixture and is considered an improvement. A fixture is

considered a permanent part of the property and ordinarily stays with the property when it is sold.

A trade fixture is a type of fixture that a commercial tenant attaches to leased land. A trade fixture differs from an ordinary fixture in that the commercial tenant may remove a trade fixture at the end of a lease, as long as the fixture is necessary for the tenant's business and removal will not cause irreparable damage to the property.

Other Real Property rights.

Emblements: Crops that a tenant has a right to remove, even after his/her tenancy. If the tenant dies before harvesting, the tenant's heirs are entitled to the crops.

Easements, rights-of-way restrictions: Easements and rights-of-way are rights given to others on your property. Restrictions are elements that limit your use of the property, such as the private restriction that there be no clotheslines allowed on the property. These items are known as appurtenances.

Personal Property

Personal property means interests in moveable tangible and intangible items not permanently affixed to, or part of, real property. Personal property is sometimes known as personalty. The distinction between personal property and real property may become unclear when personal property is attached to or inextricably related to real property. For instance, trees in a forest are undoubtedly part of real property, but when cut and are merely logs lying on the ground, they become personal property.

Maine law distinguishes between personal property owned by a business and personal property owned by an individual. Generally, all business personal property is taxable, but may be eligible for an exemption under the Business Equipment Tax Exemption (BETE) program. Taxes paid may be eligible for reimbursement through the Business Equipment Tax Reimbursement (BETR) program. Individual personal property is also generally taxable, with exemptions for household furniture, clothing and items valued at less than $1,000. There are other personal property exemptions in Maine law, for both individual and business personal property, under 36 M.R.S. § 655.

Items of personal property closely related to real property:

1. A home security system.

2. A riding lawnmower.

3. A satellite dish.

4. A wood splitter.

5. A stove and refrigerator in a home where local ordinance requires these items for the home to be considered occupied.

Example:

Figure the depreciated value for the items listed below in a pizza parlor:

100 feet of display cases	$ 36	per linear foot
3 pizza ovens	$2,500	each
1 electric slicer	$ 145	
1 walk-in cooler (built-in)	$4,000	

The display cases were purchased one year ago; the rest of the equipment was purchased seven years ago.

Depreciation: 1-5 years. . . . . .Less 25%
6 or more years . . . Less 40%

Ownership of Property

Title to real property, except mobile homes on leased land, is always accomplished by a deed. Title or ownership to personal property is accomplished by a bill of sale. There are six basic rights associated with the full ownership (ownership in “fee simple absolute” of property). These rights are what is known as the "bundle of rights.” Any of these rights or any part of them may be transferred separately. When a right is transferred to another person, this creates an encumbrance on the overall ownership of the property. The six rights are:

1. The right to use.

2. The right to sell.

3. The right to lease or rent.

4. The right to enter or leave.

5. The right to give away.

6. The right to refuse to do any of these.

Example: A property owner who owns his or her property in fee simple may choose to sell or transfer the right to cut trees on his or her own land, may transfer the mineral rights below his or her yard, may lease a part of his or her land to another person, may offer an easement for the public to walk across part of the land or may transfer the land to another person at no cost.

While the six rights described above describe a fee simple absolute ownership, the rights, by themselves, do not create a true fee simple absolute ownership because government restrictions apply and private restrictions of other property owners may exist.

Government Restrictions: Property is subject to certain government limitations on the bundle of rights. The following governmental powers limit property owners' bundle of rights.

1. The power of taxation. Federal, state and municipal governments have varying authority to impose property taxes, excise taxes, sales taxes, and income taxes.

2. The Police power. Municipal governments may apply restrictions on zoning, building, and lot size for property within a municipality.

3. The power of eminent domain. The power to take private property for public use by the state or other institutions authorized to use this process.

4. The power of escheat. The state may claim title to property when a property owner dies and there is no will or heirs.

Private Restrictions. Certain private restrictions may limit ownership rights.

1. Rights of co-owners of property.

2. Covenants and restrictions in the chain of title.

3. Mortgages. Instruments pledging real estate as a guarantee for the repayment of a loan. For mortgaged real estate, the mortgagor is the borrower and the mortgagee is the bank or other lending institution.

4. Easements and rights of way.

5. Liens and judgments.

6. Leases.

Estates in Land

Estate in land means an ownership interest in a specific parcel of land. Estates are categorized by the quality and duration of certain rights. The two basic categories of estates are freehold and leasehold.

Freehold estates. A freehold estate is one in which a person owns both property and the land on which it sits, with no time limit to the ownership. The four types of freehold estates are:

1. Fee Simple: An estate given to an individual and all his or her heirs without any end or limit. Fee simple title is the greatest possible degree of ownership. It is the broadest interest that a person may have in real property. Subject to legal restrictions placed on property by a municipality, it includes title free and clear of all encumbrances, including easements, rights of way, and liens. It is the ownership of all legal rights.

With certain statutory exception, fee simple title less the value of any encumbrances that will affect value, is the only estate which the assessor values. The assessor values personal property as being free and clear of all encumbrances.

2. Fee Tail: An estate given to a person and his or her specifically named heirs, or some particular class of such heirs, until the extinction of the last heir. This estate generally violates the rule against perpetuities (unending control of property) and has been abolished by most states.

3. Life Estate: A life estate is a fee simple title for the life of a specified person.

An assessor may be called upon to value a life estate if required by law or if the remaining interest is owned by an exempt government agency.

4. Contingent Estate: A title that exists based on an event occurring or not occurring.

Example: I hereby transfer my property to you but if you ever miss a payment, the property will revert to me.

Leasehold estates. Leasehold estates are created when a person acquires a right to the possession of real property without being the owner. The four types of leasehold estates are:

1. Tenancy for years: In this estate, the right to possess the property has a set beginning and ending and the terms of the tenancy are included in a lease. The lease is renewable only at the will of the landlord and effectively terminates at the end of the tenancy

2. Periodic tenancy (from year to year): This estate also requires a lease and a fixed period of tenancy. When the lease runs out, however, unless the landlord or the tenant acts to terminate the lease, renewal is automatic for another like period of time.

3. Tenancy at will: In this estate, a tenancy may be terminated at any time by either the landlord or the tenant. Termination must allow the tenant the time of a normal rent payment to leave. The term “at any time” has been interpreted by the courts to mean a reasonable time, usually the same as the periodic payment of rent. This estate is accompanied by a document that is less than a lease that covers the rules of the tenancy.

4. Tenancy at sufferance: Not an estate at all, this occurs when a tenant stays beyond his or her legal tenancy without the consent of the landlord. In this case the landlord is entitled to evict the tenant immediately and recover possession of the property. If, during this period, the landlord receives and accepts rent, the tenancy changes to an estate at will.

Forms of ownership.

1. Joint tenancy: The holding of property by two persons, often married partners so that each is awarded the entire interest in the property upon the death of the other. On the death of one person the ownership becomes a tenancy in severalty.

2. Tenancy in common: The holding of property by two or more persons each of whom has an undivided interest that, upon his or her death, passes to his or her heirs and not to the surviving tenants.

3. Tenancy in severalty: Ownership interest by one person.

Deeds and Deed Descriptions

The document used to transfer title to real property from one party to another is called a deed. A deed describes the property, lays out the form of ownership, and describes any easements or other conditions that place a limitation on the full "bundle of rights. There are two general types of deeds.

1. Warranty deed. In addition to transferring a described parcel of land and any improvements thereon, this deed warrants good and clear title to the purchaser, and that the seller will defend the title as to all claims.

2. Quitclaim deed. This deed transfers title to whatever interest the grantor has in a property. If the transferor has no interest in the property being transferred then the transferee receives nothing. (Some quitclaim deeds carry a warranty of the transferor that he/she will defend the title against any defects arising through him only).

Elements of a deed.

Identification of the grantor and grantee. In some states this also requires the residence addresses of both grantor and grantee.

Consideration. This means a description of the items exchanged for the property, usually the monetary consideration. In Maine the terms, "for valuable consideration" or "as a gift" are normally used in this description.

Words of conveyance. This is a statement of the grant of real property to the grantee and identifies the quantity of the estate being granted. (i.e. fee simple, life estate).

Land description. There are several ways to identify the physical description of a parcel of land. They are:

1. Metes and bounds: The most common method of land description, this is a description of the property boundaries using distances and angles from landmarks and adjacent property. This type of description, originally used in Britain, should enclose the parcel.

2. Rectangular survey system. This is more common to agricultural land in areas outside of New England. Originally developed after the Revolutionary War, this system creates a grid of 24 square mile blocks that are subdivided.

3. Lot and block survey system. This system assigns lot numbers to subdivided areas, called plats, and began to be widely used in the 19th century, with the growth of cities.

4. Rectangular coordinates. The rectangular coordinate system is based on and x- and y-axis grid, with quadrants and a gridded measurement

5. Special areas. (Often used in commercial or industrial development areas.)

6. Map and lot

Signature of the grantor. This should be the same name or names as on the previous transfer to the grantor. The signature should be notarized.

Delivery and acceptance. The preparation and signing of a deed does not pass title until the document is delivered and accepted by the grantee(s) this is known as “delivery of seizin.”

Summary

All property falls under one of two categories, real property and personal property. Real property consists of a bundle of rights, allowing the owner of that bundle to use those rights in any way that is legal. The transfer of those rights is a process of granting title to all or a part of the bundle of rights. Ownership of property consists of different rights and the transfer of some or all of those rights is done through a deed.

Chapter 1 Class Quiz

1. Real property includes all of the following except:

   A. Ownership of a life estate in land
   B. A free-standing brick wall
   C. An attached garage
   D. A portable air conditioner

2. An adequate legal description in a deed is a description:

   A. Of the real estate including all fixtures
   B. Of the improvements including all fixtures
   C. Suitable for describing the property to a real estate broker
   D. Of the boundaries of the property by which a reasonable person knows what property is described

3. Ownership of real estate includes:

   A. Rights to use the surface, subsurface and the air over it
   B. Rights to lease the land or improvements
   C. Trees growing on the land
   D. All of the above

4. The right of a landowner and his or her heirs to occupy a parcel of real estate forever is called:

   A. A qualified estate
   B. A life estate
   C. An estate in fee simple
   D. An indeterminate estate

5. By what authority may municipalities pass laws restricting landowners in certain uses of their land?

   A. Manifest destiny
   B. The law of nuisance
   C. Police power
   D. Governmental fiat

6. Escheat is the power of government to take your property without giving you just consideration. T F

7. A warranty deed guarantees that the appliances in the home work at the time of the transfer. T F

8. An estate in severalty is an estate owned by one person. T F

9. A leasehold estate at sufferance does not allow the landlord to evict the tenant until the lease is terminated. T F

10. A warranty deed guarantees that the grantor will defend the deed against all title defects of any person in the chain of title. T F

Answers on page 105

Chapter 2

THE VALUE OF PROPERTY

Nature of Property Value

The market value of property rights is based on several economic principles and forces that act upon the market place creating the highest and best use that may be defined as the most valuable use. There are many kinds of value depending on the purpose of the valuation process. The fee appraiser values one property while the municipal assessor must value all the properties in a municipality with the purpose to develop market value. The price paid for a property is not necessarily market value.

Value is defined as the relationship between an object desired and a potential purchaser. It is the ability of a commodity to command another commodity (usually money) in exchange. For purposes of real estate appraisal, value may be described as the present worth of future benefits arising from the ownership of real property.

A distinction must be made between value in use and value in exchange. A property may have one value in use and a significantly different value in exchange.

> Value in use embodies the objective premise that value is within the object itself. This value is the basis for the cost approach.
>
> Value in exchange is a subjective concept that value is within the mind of a person.

Sales determine market value. For property to have value, it must have utility, scarcity, and desirability. These three basic principles determine, create, and destroy value.

> Utility is the capacity of goods to excite desire for possession. Utility should not be confused with usefulness. Utility is a subjective concept, in the mind of a person; usefulness is an objective concept, inherent in the property.
>
> Scarcity exists when there is a limited supply of that item. The air we breathe has utility, but it is not valuable, primarily because the supply is virtually unlimited. Land, however, has a finite supply. This scarcity of land creates value. The value of a scarce item changes with fluctuations in supply and demand. If the demand outweighs the supply, the value of the goods will increase. Conversely, if the supply is greater than the demand, the value of the goods will decrease. Value will remain constant when supply and demand are balanced.

Desirability is equivalent to demand. Desirability must be backed by purchasing power.

A comparison of the terms "cost" and "price" is useful in a discussion of value.

Cost is defined as the sacrifice made in the acquisition of property. It may be incurred in either the purchase of an existing property or the construction of a new property.

Price is defined as the amount of money given or expected in exchange for property. Cost and price may be the same.

Price is generally defined in terms of money while cost is expressed as a sacrifice. A sacrifice may be in terms of money, labor, time, or some other item of value. When property is sold, the price may be either above or below the owner's cost.

Market Value

An appraiser may be seeking market value, market in use, insurance value or value for other purposes. The purpose of a property tax assessor's appraisal is always market value and this is defined by statute. In Maine, the term "just value" is used to define the value sought by a mass appraisal. Just value has been interpreted by Maine courts as the equivalent of market value.

The definition of market value as adopted by the appraisal Institute and the International Association of Assessing Officers (IAAO) is as follows:

The most probable price which a property should bring in a competitive and open market under all conditions requisite to a fair sale, the buyer and seller each acting prudently and knowledgably and assuming the price is not affected by undue stimulus. Implicit in this definition is the consummation of a sale as of a specified date and the passing of title from seller to buyer under conditions whereby:

A. Buyer and seller are typically motivated;
B. Both parties are well informed or well advised and acting in what they consider their best interests;
C. A reasonable time is allowed for exposure to the open market
D. Payment is made in terms of cash in U.S. dollars;
E. And the price represents the normal consideration for the property sold unaffected by special or creative financing or sales concessions granted by anyone associated with the sale.

An assessor should refer to the definition of market value found in the statutes and court decisions relating to the jurisdiction where the property is located.

THE ASSESSMENT PROCESS

DISCOVERY OF PROPERTY

Real Property	Personal Property
Mapping and on-site inspection	Reported by owner
Building permits	
Routine inspections	

PROPERTY IDENTIFICATION

Real Property	Personal Property
Parcel identification system	Account identification System – by business name

SITUS
Is it in your jurisdiction?

Real Property	Personal Property
Physical Location	Taxable location
	Leased equipment

PROPERTY CLASSIFICATION

Real Property Personal Property Exempt Property Utility Property

DATA COLLECTION AND ANALYSIS

General Data Specific Data Comparative data

PROPERTY VALUATION

Cost Approach Market Approach Income Approach

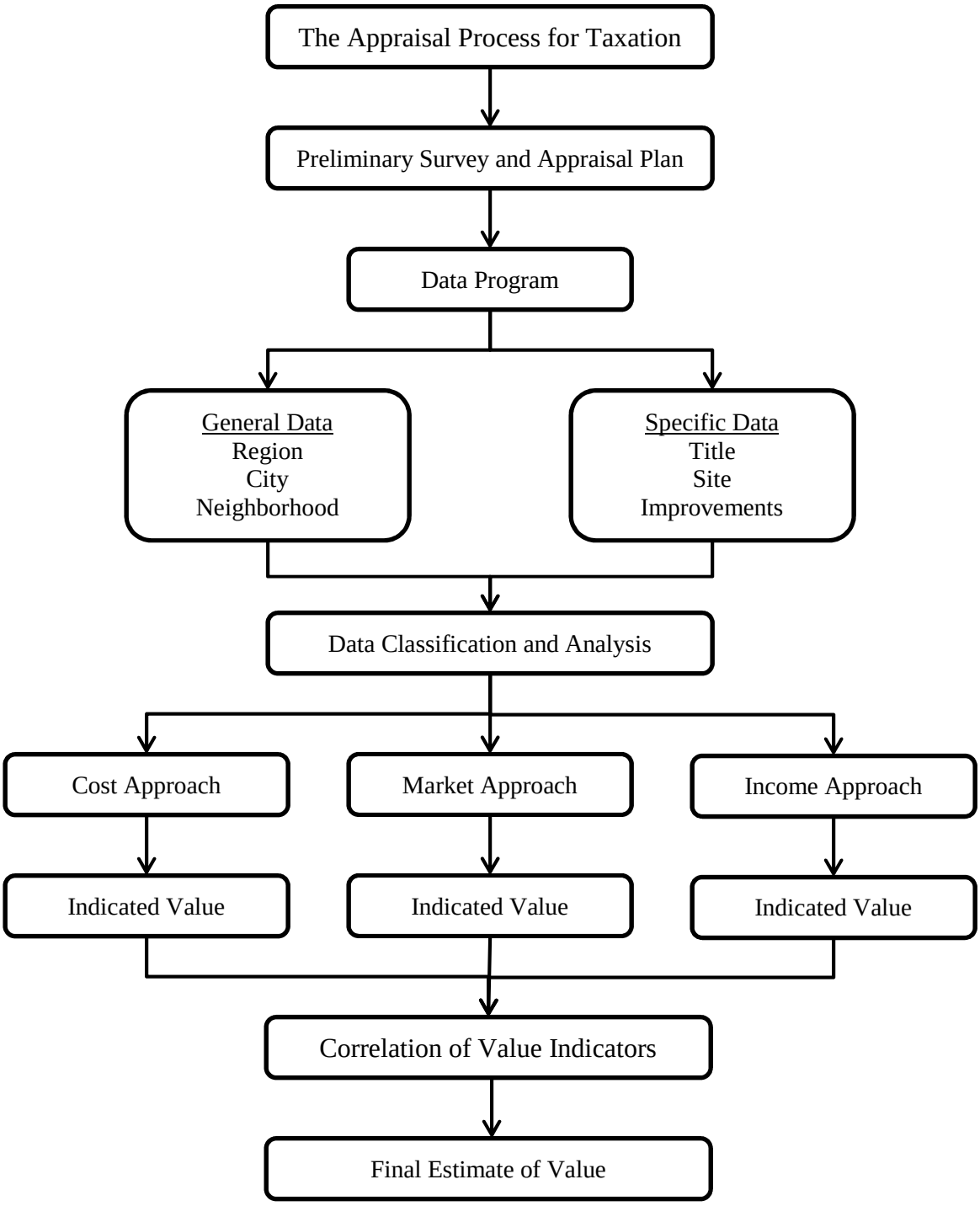
PREPARATION OF VALUATION BOOK

TAX BILLS SENT

APPEALS PROCEDURE

REPEAT ANNUALLY

The Valuation Process



Mass appraisal and fee or single property appraisal are similar methods for arriving at estimates of value. They differ only in scope. As mentioned in the introduction, fee appraisal has as its goal the valuation of one specific property for a specific purpose. On the other hand, mass appraisal for "ad valorem" purposes contemplates the valuation of all the taxable property in a political jurisdiction. Assessors use the information collected from mass appraisals to create land tables, cost schedules, and depreciation schedules, all of which are used to determine market value of specific properties.

The first step in the assessment process is discovery. Discovery is the process of uncovering new property and improvements to existing property. In addition to new buildings and additions, the discovery process will reveal land improvements – such as the addition of a well or septic system – and the creation of new base lots – such as with a recent subdivision.

Discovery is accomplished through routine physical inspection of property. An assessor should drive through his or her municipality, looking for new buildings or expansion of existing buildings. Interior inspection of buildings may reveal property improvements. An assessor should also review building permits and other permits, such as structural improvement permits and subsurface wastewater disposal permits. Review of other municipal documents, such as recorded deeds and planning board subdivision approvals will assist with the discovery process.

There are four great forces that affect property value. Collectively, these forces – physical, economic, governmental, and social – are referred to as PEGS. These outside (extrinsic) forces also create and destroy value. For example, when a municipality purchases an abandoned field and turns it into a park, the value of the houses in the surrounding neighborhood increases. Likewise, when a large company closes down its facility in a small town, the property values in that down decrease.

The Four Great Forces (PEGS)

1. Physical (environmental) Forces:
    a. Topography, lot shape, soil conditions
    b. Access to parks, stores, employment, schools, churches, transportation
2. Economic Forces:
    a. Income trends

b. Lending policies and interest rates

c. Construction costs

d. Housing prices and rental rates

e. Availability of vacant land

3. Governmental Forces:

a. Zoning

b. Building codes

c. Municipal services

4. Social Forces:

a. Population trends, age distribution

b. Family size

c. Education trends

d. Crime rates

Economic Principles of Valuation

The following principles look at the effect of the four great forces on value. An appraiser will often not recognize that he or she is using these principles, but they are always present in the work of a knowledgeable and experienced appraiser or assessor.

1. Principle of Anticipation. Market value is the present worth of all anticipated future benefits derived from a property. Those benefits must be either income or amenities. Anticipated future benefits are difficult to determine because of the principle of change.

2. Principle of Balance. Maximum market value is reached when the four agents of production (land, labor, capital, and entrepreneurial coordination) attain a state of equilibrium. When applied to a neighborhood, this principle indicates that all size and type of improvements are proportional to each other and supply and

demand are in balance. In a neighborhood, it means that there are adequate complementary uses, such as stores and residents to shop at those stores.

Land includes not only land, but air, water, light, and heat.

Labor includes all of the input to produce and sell an item, including wages, material, and financing.

Capital is the cost of financing and the return on investment.

Entrepreneurial coordination is the improvement in the allocation of resources.

3. Principle of Change: Market value is never constant, because physical, economic, government and social forces are always changing.

4. Principle of Competition: Competition is created when the potential for profit, or the existence of new amenities, attracts new sellers and buyers to a market. An excess of one type of property will tend to decrease the value of other properties.

5. Principle of Conformity: Maximum market value is achieved when there is reasonable similarity among the improvements in a neighborhood, and when the residents have similar ages, incomes, education, attitudes, etc.

6. Principle of Consistent Use: The property must be valued with a single use for the entire property. It is improper to value a property on the basis of one use for the land and another use or uses for the improvements. For example, if a house is valued as residential property, the driveway should not be valued according to its worth as commercial property.

7. Principle of Contribution: The value of one component of a property depends on its contribution to the whole.

Example: A residential homeowner spends $20,000 to erect a garage. The market value of the property with a garage is only increased by $15,000. In this case, $15,000 is the value contribution of the garage.

8. Principle of Diminishing Returns: Additional investment in a property will increase the return up to a certain point and then, beyond this point, the return on additional capital decreases.

9. Principle of Progression and Regression: The value of lower priced properties may be increased by proximity to better properties of the same type.

Likewise, a better quality property will decrease in value by proximity to lower quality properties.

10. Principle of Substitution: The market value of a property tends to be set by the cost of acquiring an equally desirable and valuable substitute property. This is the principle that underlies the three approaches to value (cost, market, and income).

11. Principle of Supply and Demand: The value of a property increases with increased demand and decreases with increased supply. Conversely, the value of a property decreases with decreased demand, such as with a recession and increases with a limitation on supply by, for example, a building moratorium.

12. Principle of Surplus Productivity: Land value tends to be set by the cost of labor, management and capital. This is related to the income approach to value. Surplus productivity is the income after costs.

Highest and Best Use

Almost all property is subject to competing uses. Rural land is subject to the competition of farming and residential subdivision. Urban land is subject to many competing uses. When estimating market value, the assessor must determine which of the competing uses is the highest and best.

Example: An urban parcel of land may be sought after by various developers as the site for a store, a gas station, apartment building, office building or an industrial plant.

Highest and best use is the legally allowable use that will generate the highest return to the property over time. When the main purpose of an appraisal is to estimate market – or ad valorem – use, the highest and best use analysis recognizes the most profitable, competitive use of the property. This is a market driven concept. Once the highest and best use is determined by the assessor, the use of the property must meet the following four criteria.

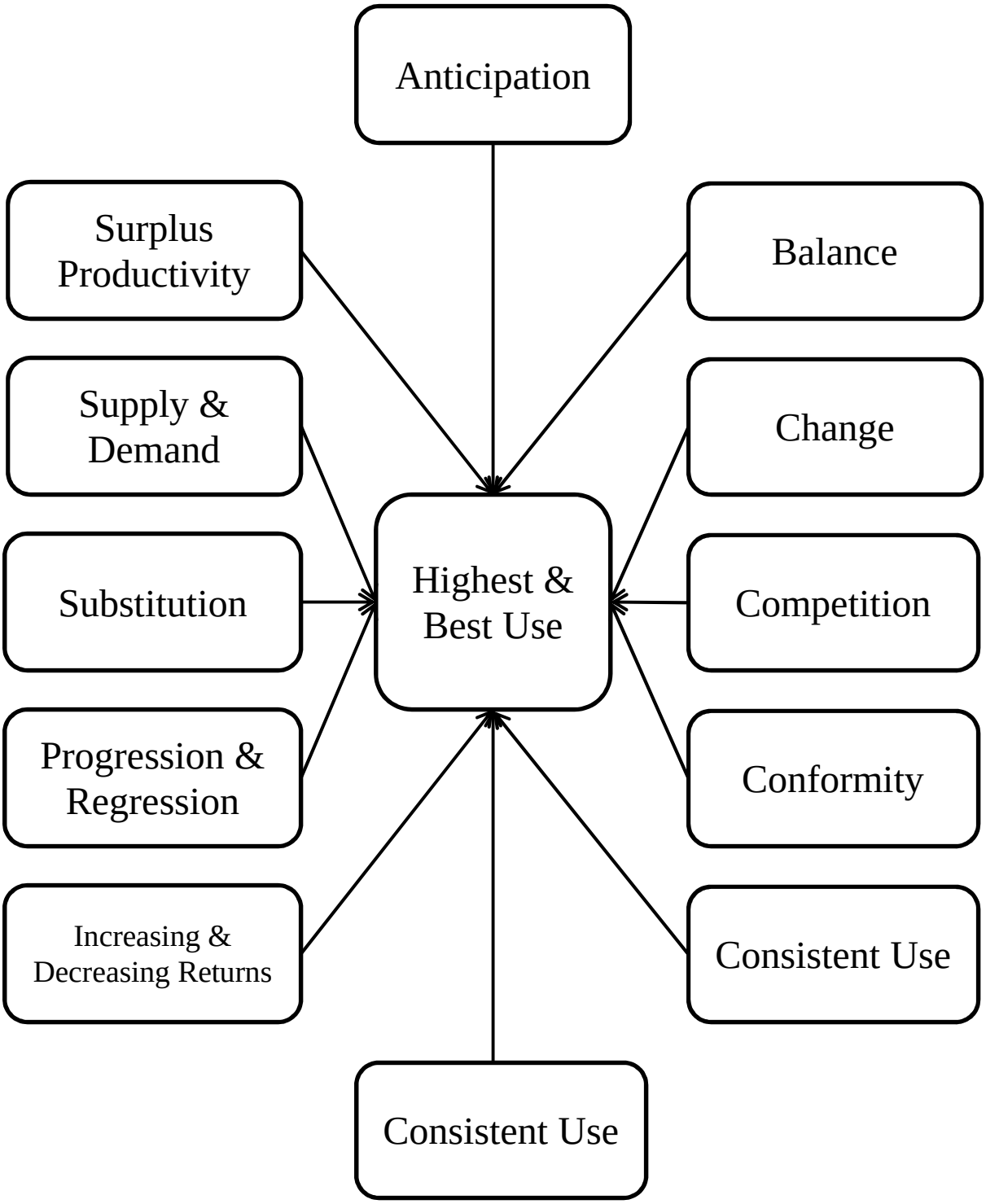
1. Physically possible and probable

2. Legally permissible

3. Financially feasible

4. Most productive (either income generated for a business or available amenities for an individual)

Interrelation of Basic Principles of Value



There are three approaches to valuation of property, the market approach, the cost approach and the income approach. As an assessor, you should at least consider each of these three methods before you assign a value to a property. For residential property, the Property Tax Division generally uses the cost approach to estimate property values, and then checks those values using the market approach. Since residential property doesn't generate income, the income approach is not applicable.

The Market Approach

The appraiser or assessor must use the principle of substitution to determine the most probable market value of any property. This means that comparable properties must be rated beside the subject to be valued and the average adjusted value of those comparable properties will tend to be the value of the subject. Differences in comparable properties must be taken into account and valued.

The market approach is the primary method of valuation for a fee appraiser seeking market value of residential property. Because the highest and best use involves the subjective valuation of amenities, comparing the subject property with other similar properties that have sold is the most accurate way of estimating value.

The market approach is sometimes referred to as the market data approach, the sales comparison approach, the comparison approach, or the market data study. In this text, we will use only the term market approach.

The Cost Approach

This approach to valuation requires an assessor to determine the new building replacement or reproduction cost, minus the depreciation appropriate to the property. This method, in conjunction with the market approach, comprises processes the assessor commonly uses in mass appraisal.

To develop an estimate of value based on cost, the assessor needs information about all of the materials and systems used in the house. To do this efficiently, the assessor will use manuals available from the State of Maine (Assessment Manual) or from major companies like Marshall and Swift.

The assessor then combines this information into several schedules for various elements of the improvements. These improvements are, commonly, foundation, framing, exterior, interior, utilities, plumbing, heating, and others as appropriate.

While inspecting properties, the assessor assigns quality ratings and depreciation to each property, the sum of which gives a basis for determining comparative value for different properties. He/she also prepares ratio studies that will assist in developing the market value of sold properties within the municipality. The assessor must then develop pricing schedules for various kinds of properties based on this sales information. The quality ratings, pricing schedules and depreciation as noted below will develop, subject to the accuracy of the listing and pricing process, the equalized value intended or just value.

There are three basic kinds of depreciation.

Physical deterioration. Wear-and-tear of property through use, the action of nature, or through neglect.

For example, carpets that have worn thin, faded wallpaper from sun exposure, broken fixtures.

Functional obsolescence. Outmoded or outdated equipment or design. This also is representative of over-adequate structural elements. Some functional obsolescence is curable and some incurable.

For example, a single bathroom in a four bedroom home, an illogical room layout, or lack of closets.

Economic obsolescence. The loss of value due to external forces or events wherein the use of the property and the economy of the area are not in harmony.

For example, a popular neighborhood becomes undesirable due to air or noise pollution, or surrounding property owners fail to maintain their own homes adequately.

To calculate the value of a property, depreciation is subtracted from the replacement value. Each type of depreciation is calculated separately and applied in the following order: physical, functional, then economic.

Example: A 15-year-old home in a neighborhood of hundred-year-old houses and some multifamily properties. The estimated cost to replace this building new is $175,000

The owners have kept the property in good physical condition, resulting in a physical depreciation estimate of 10%. The value minus physical depreciation is then $175,000 - ($175,000 x 10%) = $175,000 - $17,500 = $157,500.

Functionally, the kitchen is older style and the electrical units insufficient throughout the home for modern life. The rooms are somewhat small and the access into the home is directly into the living area. This translates to a 15% functional obsolescence, bringing the value of the home to $157,500 – ($157,500 x 15%) = $157,500 - $23,625 = $133,875.

Economic obsolescence is high for this property, since there is multifamily use of the older homes in the area and commercial development has entered the neighborhood. . It appears to the assessor that this will become a commercial area within a few years. Economic obsolescence is found to be 35%, bringing the value of the building to $133,875 – ($133,875 x 35%) = $133,875 - $46,856 = $87,019.

Because of depreciation, the assessed value of the total property will be getting lower each year. While land is not subject to depreciation, the assessor must still carefully look at the value of the land, watching for reductions due to outside influences.

Typically, as commercial activity enters a neighborhood, the value of land increases. Commercial uses are more concentrated and generally put upward pressure on land prices. Property that is changing from residential to commercial use will usually be valued at the current value for commercial property minus the cost to renovate or bulldoze the existing residential improvements.

Example:

The replacement cost of a dwelling:	$ 175,000
Adjustments to value: Additions	$ 10,000
Deductions	($ 5,000)
	$ 180,000
Physical depreciation (20%) 180,000 x 0.2	($ 36,000)
	$ 144,000
Functional obsolescence (20%) 144,000 x 0.2	($ 28,800)
	$ 115,200
Economic depreciation (10%) 115,200 x 0.1	($ 11,520)
	$ 103,680
Outbuildings (depreciated)	$ 12,000
Land:	$ 35,000
Overall Property Value:	$ 150,680

The Income Approach

This approach to value asks the assessor to capitalize the net income generated by a property to develop a value for the property including any land involved in it. The land may or may not be necessary (as a parking lot) to that production of income.

The main equation for the income approach is called "IRV" and is stated as Income = Rate x Value. Adapting the IRV equation to determine the unknown value amount, Value = Income/Rate. The equation is visually represented by the triangle to the left. For this equation Value = the current market value of the property, Income = the estimated income generated by the property and Rate = the capitalization rate, or the rate of return for income producing property. This approach is covered more thoroughly in Course PT103 – Valuation of Real Estate.

Valuation of Land

Land, because it is permanent and indestructible, is almost always valued using the market approach. Where there are few sales, it is possible to value land by subtracting the value of buildings or other improvements from the overall value of the property. The most common approach to land valuation is the square foot method, except in rural areas, where the acre is used. The four basic types of land are residential, agricultural, commercial, and industrial.

Current Use Classifications

The Maine Constitution Article IX, Section 8(2) states :

> *The Legislature shall have power to provide for the assessment of the following types of real estate wherever situated in accordance with a valuation based upon the current use thereof and in accordance with such conditions as the Legislature may enact:*
>
> *A. Farms and agricultural lands, timberlands and woodlands;*
>
> *B. Open space lands which are used for recreation or the enjoyment of scenic natural beauty;*
>
> *C. Lands used for game management or wildlife sanctuaries; and*

D. Waterfront land that is used for or that supports commercial fishing activities.

Tree Growth: (See Bulletin No. 19 – Maine Tree Growth Tax Law)

Under the Tree Growth Tax Law, forested land of at least ten acres, maintained for commercial harvesting, is valued by the State Tax Assessor in conjunction with the Bureau of Forestry on its productivity value rather than on market value.

The land values are set for each county each year for acreage of softwood, mixed wood and hardwood and are usually lower than the values for undeveloped land in any municipality.

A taxpayer may be approved for this classification when he or she has a forest management plan prepared by a licensed forester. There is a substantial penalty if a person wishes to withdraw land from this classification.

An application must be filed prior to April 1 for the year in which classification is requested, complete with proof that a forest management plan has been prepared and a map showing all the forest types and lands not classified. The plan does not have to be provided to the assessor.

The penalty for withdrawal from this program is a percentage of the difference between market value of the land on the date of withdrawal and the 100% value of the land under the program. If a municipality does not have a certified ratio of 100%, an adjustment to the calculated values will be necessary to result in the correct penalty.

Farmland: (See Bulletin No. 20 – Farmland Tax Law)

To qualify, a tract of land must contain at least five contiguous acres. Application may be made for more than one tract of property as long as one of the tracts contains five acres.

The land must produce an income of at least $2,000 per year previous to application.

The land must be used for farming, agricultural, or horticultural use, but may include forest land and wasteland within the five-acre farm unit.

Provisional classification is also available for two years to persons who are generally starting up a farm use. At the end of the two years the farm must be producing the $2,000 per year minimum income or must be withdrawn from the program.

The penalty for withdrawal is the difference between the taxes that would have been due had the land not been classified and the tax actually paid.

Open Space: (See Bulletin No. 21 – Open Space Tax Law)

Open space land is defined as any area of land, the preservation or restriction of the use of which provides a public benefit in any of the following areas:

1. Conserving scenic resources;

2. Enhancing public recreation opportunities;

3. Promoting game management; or

4. Preserving wildlife and wildlife habitat.

When applying, a taxpayer must choose the classification of open space tax reduction requested along with the proof required for any permanent conservation protection. The different classifications are:

Ordinary open space. For land that is preserved by the owner to provide a public benefit, a 20% reduction is applied.

Permanently protected open space. This requires a permanent conservation easement and reduces valuation by an additional 30% over the ordinary 20% open space reduction.

Forever wild open space. Land in this classification must remain unaltered and is eligible for an additional 20% reduction in value over the ordinary 20% open space reduction.

Public access open space. Land open to the public by reasonable access and the owner of which agrees to take no steps to discourage or prohibit daytime public use. The owner may permit hunting, camping, and other recreational uses and may impose temporary restrictions to protect wildlife and endangered species. Land in this classification is eligible for an additional 25% reduction over the ordinary 20% open space reduction.

Managed forest open space. This is land that would otherwise qualify for classification in the Tree Growth Tax Law program. Land in this classification is eligible for an additional 10% reduction over the ordinary 20% open space reduction.

The penalty for withdrawal from this program is a percentage the difference between the market value of the land on the date of withdrawal and the value of the land under this classification.

Working Waterfront: (See Maine's Working Waterfront FAQs)

Working waterfront land means a parcel or portion of a parcel of land abutting tidal waters or is located in the intertidal zone (located between the high and low water marks) or the use of which is more than 50% related to providing access to or in support of the conduct of commercial fishing (including commercial aquaculture) activities.

Working waterfront land used *predominantly* (more than 90%) as working waterfront is eligible for a 20% reduction from just value. Working waterfront land used *primarily* (more than 50%) as working waterfront is eligible for a 10% reduction from just value. Working waterfront land that is permanently protected from a change in use through deeded restriction is eligible for the aforementioned reduction plus an additional 30% reduction.

The penalty for withdrawal from this program is a percentage the difference between the market value of the land on the date of withdrawal and the value of the land under this classification.

Historic and Scenic Properties:

This statutory classification is optional for municipalities. It allows the municipality to raise money to lower the taxes on certain historic or scenic properties provided that the owner maintains the property in accordance with criteria that are adopted by ordinance for the maintenance of the historic or scenic integrity of such property.

The Maine Historic Preservation Commission provides guidance in implementing this law.

Valuation Resources

1. The State Assessment Manual.

2. Revaluation Company grading and pricing schedules

3. Professional valuation services like Marshall & Swift.

Summary

The assessment process requires the skills of an appraiser, economist, mathematician, and mapmaker. This chapter has been an introduction to the thought process and procedures used by an assessor. The principles discussed will give an assessor the

necessary knowledge of the real and personal property markets in a municipality and in the broader areas of Maine. An understanding of the many factors demonstrated in this chapter that create value in real estate markets must become second nature to an assessor. In addition, further knowledge of the methods by which we measure value (the three approaches to value) provides the foundation for adequate estimation of the market value – or just value – of taxable property.

Chapter 2 Class Quiz

1. The three basic principles that create value are:

   A. Price, demand, location
   B. Utility, price, demand
   C. Utility, scarcity, desirability
   D. Desirability, price, utility

2. The relationship between an object desired and a potential purchaser is known as:

   A. Price
   B. Value
   C. Exchange
   D. Demand

3. Market value is defined by all of the following elements except:

   A. The buyer and seller are motivated
   B. A reasonable time is allowed for exposure to the market
   C. The assessed value of the property is based on the price
   D. The price represents normal consideration for the property

4. Which of the following contains substantial elements of an appraisal for tax assessment purposes:

   A. Purpose of the appraisal, discovery of the property, classification of the property
   B. Discovery of the property, classification of the property, data collection and analysis
   C. Classification of the property, data collection and analysis, price verification
   D. Data collection and analysis, price verification, purpose of the appraisal

5. The four great forces are:

   A. Highest and best use, governmental, social, physical
   B. Physical, economic, governmental, social
   C. Supply and demand, physical, governmental, economic
   D. Anticipated use, governmental, social, physical

6. Under the Tree Growth Tax Law, a parcel must contain a minimum of ten forested acres, be maintained for commercial harvesting and have an up-to-date forest management plan. T F

7. The cost approach asks the assessor to use the principle of substitution to determine the most probable market value of a property. T F

8. The prices of properties tend to increase with an increase of supply of similar properties T F

9. The principle of anticipation states that market value is the present worth of all anticipated future benefits. T F

10. Open space classification is only available for lots over five acres that contain scenic resources, public recreation opportunities or preserve wildlife habitat. T F.

Answers on page 107

Chapter 3

THE ASSESSOR'S TASK

Tax Maps

Part of the foundation upon which sound municipal valuation rests is a complete set of accurate tax maps. An assessor must know where property is located in the municipality and how much land makes up a parcel before a defensible appraisal can be made. Municipalities without adequate tax maps will find that their assessments may not reflect the equality expected by law. Mapping an entire municipality is a complex process, generally accomplished by highly trained firms, and requires the following records and processes.

Map scales should be developed to accurately represent the land parcels in the municipality. In urban areas with many small lots and in areas being developed, where land is likely to be subdivided, a scale of at least one inch equals one hundred feet should be used. Rural areas may be mapped in smaller scales.

Maintenance of existing maps and the mapping of deeds as they come in to the office are the responsibility of the assessor. To accomplish this responsibility, an assessor must have basic drawing skills, be able to read and understand deed descriptions, maps and other sketches. An assessor must work with accuracy on maps already developed. Tax maps should be revised every year by April 1, so they are accurate for the new tax year.

Assessor Measurements

Length

One rod	=	**16.5 feet**
		5.0292 meters
One chain	=	100.084 links
		66 feet
		20.1168 meters
		4 rods
One meter	=	39.3701 inches
		3.2808 feet
		1.0936 yards
One kilometer	=	3,280.8399 feet
		1.093.6133 yards
		1,000 meters
		0.6214 miles
One mile	=	**5,280 feet**
		1,760 yards
		320 rods
		80 chains
		1.6093 kilometers

Area

One square meter	=	10,000 square centimeters
		10.7639 square feet
		1.1960 square yards
One acre	=	**43,560 square feet**
		4,840 square yards
		160 square rods
One hectare	=	2.4711 acres
		107,639.1042 square feet
		11,959.9005 square yards
One square kilometer	=	0.3861 square miles
		247.1054 acres
		1,000,000 square meters
One square mile	=	**640 acres**
		2.5900 square kilometers

Measurement Tools

Good practice dictates that the assessor use the same ruler or tape measure consistently to minimize errors. Most tape measures have a lug on the eye (the beginning of the tape) that is the starting point for measurement. Proper handling of a ruler or tape measure requires care and experience.

The architect's scale - The architect's scale is a ruler divided into inches and scales of 3/32" - 1/8" - 3/16" - 1/4" - 3/8" - 1/2" - 3/4" - 1" - 1 1/2" - 3" equaling one foot of measurement. Sketches of buildings and structures require accurate scale drawings to assure accurate basis for computations of valuation. Architect's scale tape measures are likewise divided and generally have only one or two scales per tape.

The engineer's scale – Also known as an engineering ruler, the engineer's scale is a ruler or tape measure used to translate measurements between a map and actual size. An engineer's scale ruler is divided into decimal inches and scales of 20' - 30' - 40' - 50' - 60' per inch. Sketches of land require accurate scale drawings to assure accurate basis for maps and computation of land valuation. Maps may be drawn at scales of 100' - 200' - 300' - 400' - 500' - 1000' per inch using the engineer's scale in multiples of 10. Engineer's scale tape measures are likewise divided and generally have only one or two scales per tape.

Drafting equipment - You will probably use a drawing board, T-square, drafting machine, triangles, and other drafting tools as an assessor. In this course we will concern ourselves with a basic understanding of some of their applications for specific uses. Later courses will cover additional applications as required.

Triangles - The 30 degree – 60 degree – 90 degree triangle and the 45 degree - 90 degree triangle are basic tools and may be used in conjunction with scaled rulers to develop sketches and maps. Note that scaled rulers should never be used to draw with as this may destroy the readability of the scales and reduce their useful lives. The internal angles of a triangle total 180 degrees. Two identical triangles may be reversed to draw a parallel line to a given line or to extend a line. Placed against a T-square or a given line, a line may be drawn perpendicular to that line and to a given point. The use of this in the construction of scale drawings or given areas will be shown in computation of problems in this section.

Parallel ruler - The parallel ruler is another mechanical aid by which a line may be developed parallel to another without mechanical construction to draw that line both parallel to the given line and through a point.

Computer mapping programs - Over the years, there have been great strides in the development of tax maps using aerial and satellite photography, global positioning systems (GPS) and surveying equipment. With GPS maps, overlays can be made,

showing locations of utilities, buildings, elevations, and zoning districts. Nevertheless, the basic requirements of good cartographic skills will always be helpful. There are new systems which may eventually replace all the manual work now required in the development of accurate maps.

Municipal Tax Maps

A municipality's property tax maps should be prepared according to the following criteria:

Orientation. A uniform north arrow should be used on all map sheets with the North arrow directed to the top of the sheet.

Title. Each map should have a title block containing the municipality, county, contractor's or assessor's name and address, and date the map was completed.

Legend. Each sheet should have a legend fully describing any symbols used.

Parcel identification. A parcel is a land area enclosed within a continuous boundary and under one ownership. Each parcel should show, at least:

1. Border lines
2. Parcel identification number
3. Acreage or dimensions

Tax maps may also show unique characteristics such as forests, fields, and bodies of water.

Items found on a tax map include:

Survey records.

Municipal benchmarks and monuments (boundaries). These are usually found at the boundary between municipalities, counties and other political jurisdictions.

Layouts of roads

Public property

Deeds and other papers relating to ownership.

Other physical descriptions such as swamps, ledges, and scenic views.

It would also be helpful if properties were identified as to their zoning districts. For example:

Residential suburban

Mixed residential (+ 2-4 family)

Commercial

Industrial – light and heavy

Records in the Assessor's Office

Property record cards. This is a set of permanent cards or computer files that contain the following information:

Owner name and mailing address.

Location of the property, including address and parcel identification number.

Construction details, such as building material, style, and layout.

Quality grades for components. These grades are representations of the quality of a structure and are covered in Course PT103 – Valuation of Real Estate.

Inspection date and inspector's name.

Building areas, such as bedrooms and bathrooms in residential property.

Valuation using the cost approach, including physical, functional, and economic depreciation. This is also covered in Course PT103 – Valuation of Real Estate.

Land classification and characteristics. For example, waterfront property on a level lot.

Land valuation (Note: land does not depreciate). This is covered in Course PT103 – Valuation of Real Estate.

Index cards. Index cards provide the assessor with a simple card with name, address and map/lot identification for use in finding other records and contacting a taxpayer.

Valuation book. This is the document giving the values of land, buildings and personal property from which the final tax rate is developed. When this is turned over to the tax collector it must be accompanied with a Certificate of Assessment. A municipality's tax rate is called the mill rate and is generally calculated by dividing the municipal revenue to be raised (budget) by the total value of taxable property in the municipality. For example, if a municipality has an assessed value of taxable property of $125,000,000 and the annual budget agreed on by the voters is $2,000,000, the mill rate is calculated as:

mill rate = $2,000,000/$125,000,000 = 0.016, or $16 per $1,000 of value

Assessment manual. An assessment manual with building and land pricing schedules, in combination with the tax map and neighborhood inspection, is one of the most important tools of the assessor in insuring uniform and fair values for real estate.

Parcel Numbering/Situs

The numbering of all parcels in a municipality is necessary to tax maps in identifying property. All tax maps should include lot numbers. There are many numbering systems in use across the state.

The Map/Sheet – Lot System.

The Government Survey Parcel Identification System.

The Geographic Coordinate Code System.

Determination of Land Values

The assessor must realize that each parcel of land, whether a minimum house lot or large acreage, is unique with characteristics that affect value. The fair valuation of land is, therefore, a complex task for the assessor.

The first task of the assessor is to look at past sales for perhaps two or three years, adjust for time and differences and develop current prices paid for similar parcels. The assessor may also have to look at values in nearby towns.

Next, the assessor must make land tables reflecting the differences in values for different sizes of property and different acreages of the larger lots. In this way the assessor will identify characteristics of land that affect value.

The effect of lot width and depth on value.

The effect of location (corner lot, lots on curves) on value.

The effect of topography on lot value.

The assessor should have tax map descriptions and dimensions of all lots and parcels for use in property inspections.

The assessor must apply the physical characteristics of each parcel as found at the property to the land tables, making small adjustments for minor differences in lots. To make a defendable valuation, all differences and comparisons should be noted on the property records.

One standard method of valuing land is called the **front foot value method**. With this method, a lot of standard depth is assigned a value per foot of frontage, usually on a road, but unit front foot values may also be developed for waterfront parcels. The standard depth is determined through an analysis of local custom and preference and is considered the most representative depth in the area. An analysis of land sales will help the assessor determine the value of one foot of frontage (front foot) for a lot of standard depth (the unit front foot value). One front foot multiplied by the standard lot depth equals one unit foot.

Once the unit front foot value is determined, that value may be adjusted up or down for lots of non-standard depth. The depth of a lot influences the front foot value. Lots that are deeper than standard are more valuable and lots that are shallower are less valuable than lots of standard depth, but the depth influence is not linear. For example, a lot that is half as deep as the standard is not worth half as much. The front foot value adjustment based on depth is called the depth factor. The depth factor is calculated by taking the square root of the subject lot depth divided by the standard depth. For example, the depth factor for a lot 125 feet deep where the standard depth is 100 feet is calculated:

$$DF = \sqrt{(125'/100')} = \sqrt{1.25} = 1.12$$

For more information, see the text for Course PT103 – Valuation of Real Estate.

Another method for valuing land is called the **land residual technique**. When an assessor has a sale price for the entire property and the value of the building is known, the assessor can subtract the value of the building from the total sale price and the result is the value of the land.

Residential land can be put into one of two categories, urban or rural. The most common approach to land valuation is the square foot method, except in rural areas, where the acre is used.

Building Inspection

An assessor or inspector must visit a property to describe it, its neighborhood, and its environment. This visit is an opportunity to use the property card, develop an accurate profile of the entire property and create the basis for an accurate valuation.

During a visit, look around the neighborhood for the conformity of the improvements with other properties, the possibility of problems, easements, and outbuildings.

1. Check lot Sizes and topography

2. Determine the relationship of land to other land in the area

3. Take exterior measurements of the foundation. The total area of the foundation is normally the square footage used in valuing the improvements. Some improvements may extend beyond the foundation. Make a sketch of the outline of the building for the property record card, showing story heights, type of construction, and other information for the cost schedules being used.

   Determine the quality and elements of the building exterior including style, siding, and roof.

   Look at the building interior and note the quality, number of rooms, floors, walls, and other information contained on the property card. Be detailed with these notes.

   Heating systems, fireplaces, bathrooms, kitchen, and other rooms are important elements of value in a residential property. Location, ceiling height, electric utility, and access to the highway and other transportation routes are important to commercial and industrial property.

Valuing Buildings and Other Improvements

After an assessor has inspected all properties and has prepared property cards for each, the building costs must be developed using local cost schedules and construction cost manuals such as Marshall & Swift. Details of the valuation process are covered in Course PT103 – Valuation of Real Estate.

A municipality should conduct a revaluation of all property when it becomes apparent to the assessor that inequality has developed with property in the municipality that cannot be repaired by changing a few values. A revaluation is a major task and usually requires the vote of the town to spend the money to accomplish it. To have a quality revaluation, tax maps should be revised, a new assessment manual prepared and new, up-to-date property cards made with current photos of the improvements.

Valuation of The Municipality

When all property has been inspected and valued in the community, the assessor totals the values to determine the value of the municipality. Once that is done, the mill rate must be established. This mill rate is determined basically by dividing the net to be raised through property tax plus an amount called an overlay, divided by the municipal valuation. There is no statute that states who shall determine the final tax rate.

The statute states that an overlay may not be more than 5% of the amount to be raised. The municipal officers determine how much this overlay should be, estimating the miscellaneous charges (legal fees, other special needs). This amount is added to the amount to be raised before setting the mill rate.

A calculation is also needed to determine the effect of the reduction in valuation because of the veteran, blind, and homestead exemptions. (See the homestead application form in your packet.)

When the mill rate has been set, it is applied to each property in the municipality and the commitment book is then turned over to the tax collector with a warrant for the collection of those taxes.

Summary

Tax maps are invaluable in determining the location and ownership of property in a municipality. High quality for such maps enable the assessor to develop accurate records not only of the land but the location and value of all improvements to the land. A tax map with a parcel numbering system will provide the assessor the basis of an accounting system in preparing a valuation book. A detailed inspection and the use of property record cards is the primary method of listing a property so that all elements of land and building can be compared with other properties in the municipality. The valuation book is developed to determine a fair property tax for each property in a municipality.

Chapter 3 Class Quiz

1. The most important records used by an assessor to determine the assessed value are:

   A. Economic statistics, building codes, property surveys, tax maps
   B. Property record cards, building codes, income data, sales records
   C. Tax maps, property record cards, an assessment manual, property lists
   D. Inspection reports, tax rates, tax maps, cost manuals

2. To prepare accurate tax maps, the assessor needs:

   A. Deeds, surveys, sales data, zoning regulations
   B. Inspection reports, zoning regulations, building codes
   C. Property record cards, deeds, surveys
   D. Topographic maps, sales data, an assessment manual

3. In determining the value of parcels of land, the assessor must consider:

   A. The effect of width and depth of each parcel
   B. The effect of location within the municipality and neighborhood
   C. The effect of topography
   D. All of the above

4. An engineer's scale has divisions of:

   A. Feet and meters
   B. Meters and centimeters
   C. Feet, inches, and 10ths of inches
   D. Feet, inches, and 16ths of inches

5. Municipal tax maps should be revised:

   A. Whenever a municipality accomplishes a revaluation
   B. Annually as of April 1
   C. Annually prior to town meeting
   D. Whenever the Property Tax Division requests it

6. If a municipality needs to raise $2,000,000 and the taxable valuation of the municipality is $100,000,000, the minimum mill rate is:

   A. 0.05
   B. 0.02
   C. 0.025
   D. None of the above

7. The valuation book:

   A. Describes each property in detail for valuation purposes
   B. Is used to develop the values of real property rights
   C. Is the document giving the values of property from which the tax rate is calculated
   D. Is the work product used by assessors in the field

8. When performing an on-site property inspection, which of the following is least useful in developing the property value?

   A. The topography of the site
   B. The style of the building
   C. The cosmetic treatment of the rooms
   D. The utility of the basement

Answers on page 109

Chapter 4

MAPPING PROCEDURES AND MAINTAINING MAPS

Introduction

Accurate property tax maps are necessary to ensure equitable and efficient property tax administration. Proper use of maps requires knowledge of how they are constructed and maintained. Property tax maps also serve as an excellent basis for many planning and coordinating projects, such as sewage disposal systems and municipal land-use planning. Many different types of maps are available, a few that the assessor might use are as follows:

1. Land use maps
2. Land value maps
3. Risk area maps
4. Subdivision maps on plot plans
5. Highway maps
6. Right-of-way maps
7. Topographical maps
8. Soil type maps

Assessors are able to make important determinations concerning a given parcel from the maps when used in conjunction with other maps of the same area:

1. Exact size or area (in square feet or acres)
2. Exact location (in relation to known street, corner or monument)
3. Accessibility
4. Amount of road or lake frontage

5. Land use. The four basic categories of land use are:

   Residential

   Commercial

   Industrial

   Agricultural

Theory and Construction

A map is a diagrammatic representation of a portion of the earth's surface drawn to scale. A portion of the earth, which is 3-dimentional, is represented in a flat, level surface (planimetric), with the aid of sophisticated equipment and qualified personnel. The earth would appear as a circle if shown on a flat level surface. The relief of the hills, valleys and sloping areas would be removed in planimetric maps – all would appear the same on a flat surface. Construction of property tax maps generally involves the use of aerial photography. The drawback for aerial photographs is that they are not easily scalable, making area computations difficult.

Location of Property

In properly locating a parcel of land, we must determine the absolute location of the corners of the parcel as well as the direction or bearing of the property boundary lines. In describing the process by which a chip or aircraft determines its coordinates (exact location) and the direction they must travel to reach their determination, we are preparing ourselves for properly locating and describing the parcel of land. The location of any point on the surface of the earth requires coordinates or cross references. The spherical coordinates generally are referred to as latitude and longitude.

Latitude

Latitude is express as the angular distance of a place above or below the equator. It can be expressed as north latitude or south latitude (see diagram on page 53). Latitude is expressed in degrees. The latitude of the equator is 0°, the latitude of the North Pole is N 90°, and the latitude of the South Pole is S 90°.

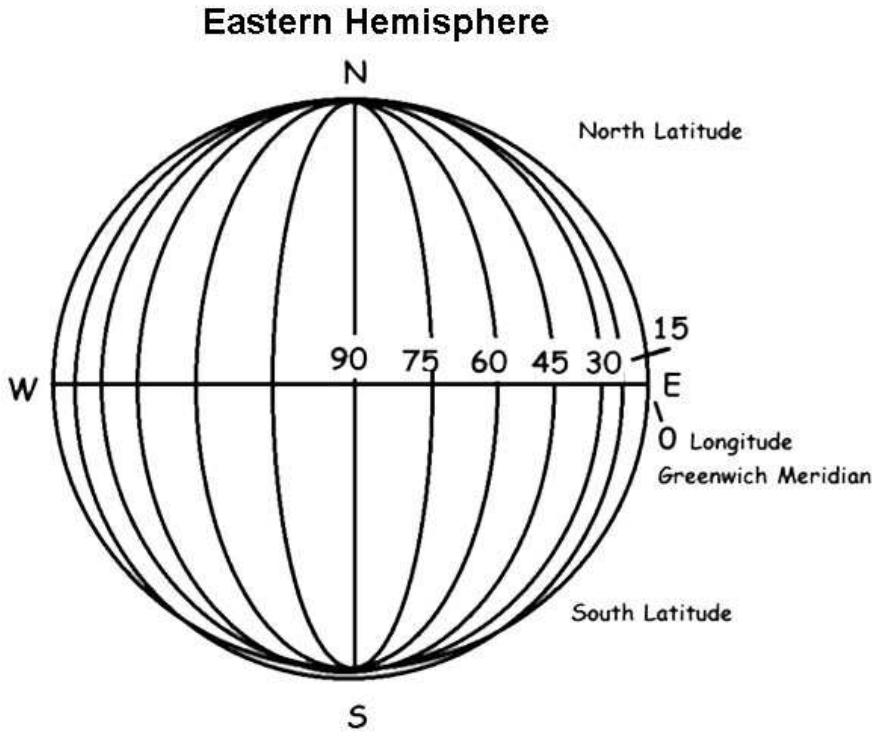
Maine is located at approximately N 45°. Maine is located roughly halfway between

the equator and the North Pole. N 45° latitude marks the northern boundary of New York, Vermont and New Hampshire. It crosses Maine through the Rangeley region to between Perry and South Robbinston.

Through latitude and longitude we are able to determine how far we are located north and south of the equator and how far we are located east or west of the Prime Meridian. Maine's location would be N 45° W 70°. On a local property tax map, we would determine how far and in what direction our property is from a known point or monument.

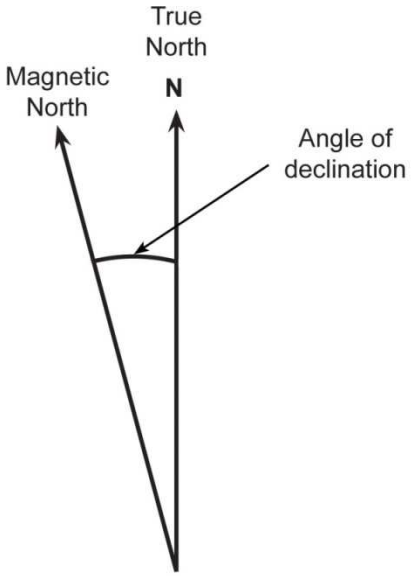
Longitude

The direction of any line is determined by the angle the line makes with a true north-south line or meridian. A meridian of longitude is referred to as any line drawn north or south through the poles and parallel to all other meridians at the equator (see diagram below). By using a line of longitude we are able to determine how much east and west we are from a base meridian. The base or prime meridian passes through Greenwich, England and has been accepted as zero longitude. One would travel 360° around the earth to return to this place of beginning (see diagram).



Magnetic North

Normally, an assessor orientates himself or herself through the use of a compass, which always points north. However, a compass points to magnetic north because of the magnetic effect of the earth itself. Magnetic north differs from the true north or the North Pole.



The angle between magnetic north and true north is called the angle of declination . The angle of declination varies from year to year and is called the variation of declination. Magnetic bearings on many older maps may not agree with current readings. The declination in Maine ranges roughly from 15° W to 20° W of true north. Generally, the declination in the western U.S. is east of true north and the declination of the eastern U.S. is west of true north. Zero magnetic north is where the magnetic north agrees with true north and can be shown on an isogonic chart as running in an irregular course from the southern border of South Carolina to northern Michigan.

Scale

All maps must be drawn to the proper scale. Scale is defined as what a given map distance (usually 1 inch) represents on the ground. 1" = 50' indicates that a scale of 1 inch on the map represents 50 feet on the ground. 1 : 24,000 indicates that a scale of 1 inch on the map represents 24,000 inches (2,000 feet) on the ground.

Common scales:

1. 1" = 50' ; 1" = 500' ; 1" = 1,000' (Tax Maps)

2. 1" = 20 chains ; 1" = 40 chains (Forestry Maps)

3. 1 : 24,000 ; 1 : 62,500 (Topographic Maps)

In drawing maps, the plotting is done in feet per inch using an engineer's scale. An engineer's scale is a piece of equipment used in scaling distances for mapping purposes. The scale is divided into 10, 20, 30, etc. units per inch. Each unit represents some unit of measurement (feet, chains, miles, etc.) on the ground.

There is a similar scale used by architects for drafting purposes. The engineer's scale and the architect's scale are different in the unit divisions. An architect's scale is broken down to $1/8^{th}$, $1/4^{th}$, ½ etc. of an inch.

The engineer's scale should not be confused with an engineer's tape. The tape is usually 100 feet long and divided into 10ths and 100ths of a foot for accurately measuring distances on the ground. The scale is a ruler, while the tape is a tape measure.

In field work, the surveyor uses the engineer's tape and distances are measured in feet, tenths, and hundredths of a foot. 3" would be measured as 0.25' ; 6" as 0.5 ' and 8" as 0.75'.

Older maps were often drawn based upon surveys made with the Gunther's Chain. This chain is 66 feet long and consists of 100 links, each 66 hundredths of a foot. The chain was particularly adapted to measurement of acreage. Ten square chains constitutes one acre. The chain also has a simple relationship to the mile, which is 80 chains. The use of the chain has been almost entirely superseded by the steel tape.

Information on Property Tax Maps

Essential information that should appear on a map:

1. A complete title of what the map represents
2. The date of the map
3. The scale to which the map is drawn
4. The name of the maker
5. The meridian, or north point, indicated in such form as to identify it as true or magnetic north

Magnetic north is generally shown with only one-half of the arrowhead. If the half arrowhead is on the west side of the arrow, the declination is to the west. The opposite is true for an east declination.

Maintaining Property Tax Maps

The process of maintaining property tax maps requires certain equipment:

1. Straight edge
2. 45° and 60° triangles
3. Engineer's scale – preferably 10-60
4. Protractor

5. T-square, often of assistance if a drafting table is available, but not necessarily essential

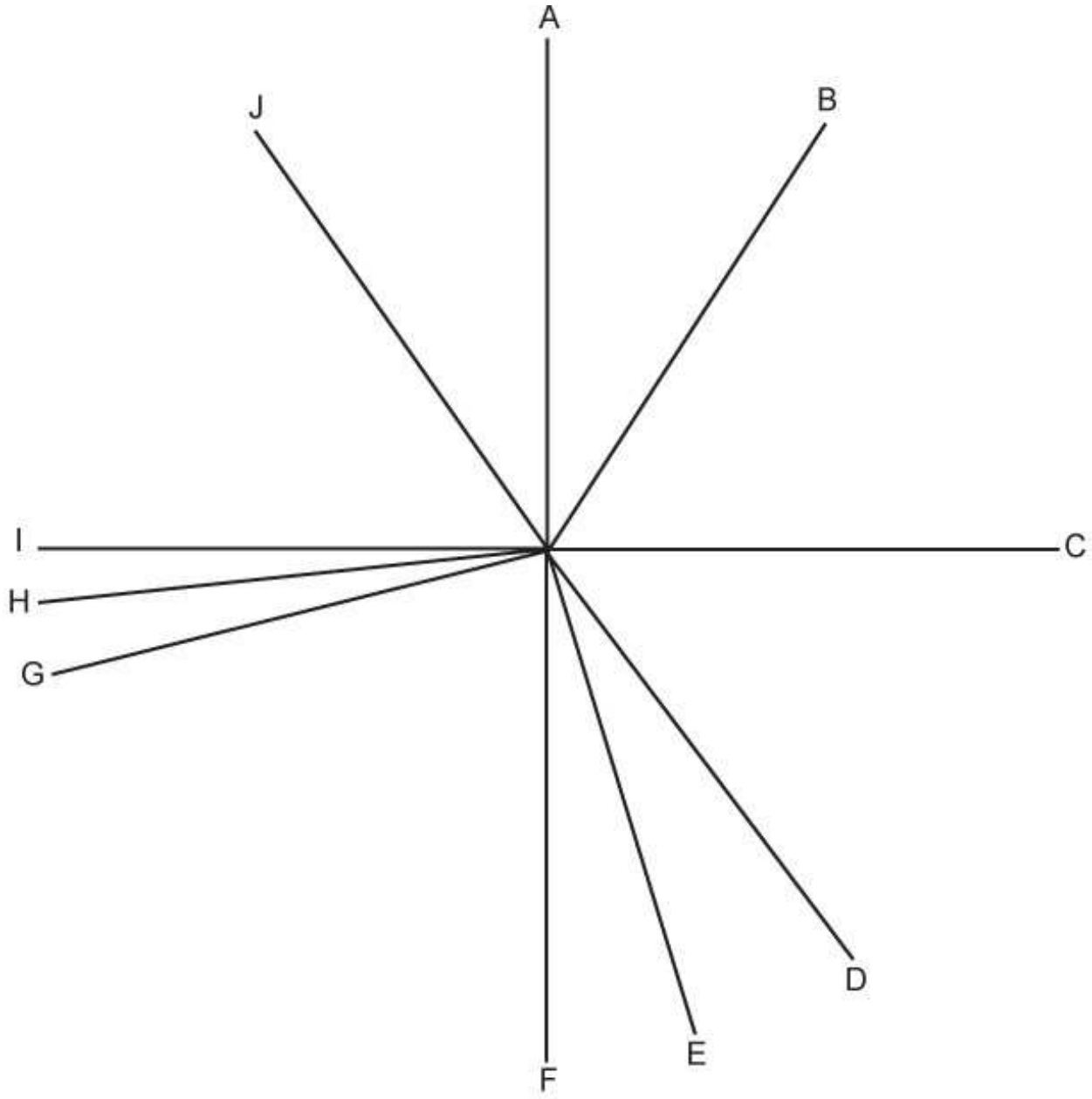
In most cases, deeds now describe property by angles and/or bearings from base line and linear measurements along property lines. When bearings are used, it is first necessary to relate the north point to the point of beginning. A triangle is lined up with the north point and, then by sliding it along a straight edge, a line is drawn parallel to the meridian at the point of beginning. This establishes the base line or laying out the property line in accordance with the bearing. This is done through use of a protractor.

As an example, a deed provides that:

> Beginning at an iron pipe set on the north side of the street line running N 15° W, 180 feet to a stone wall; thence N 17° E, 200 feet to a wooden stake; thence running S 10° E, to an iron pipe at the street line; and running along said street line to the point of beginning.

From the information given, this lot can be plotted on a map if the point of beginning is known. The dimensions and one bearing are missing. By construction and measurement with scale and protractor, these can be determined.

Chapter 4 Class Quiz

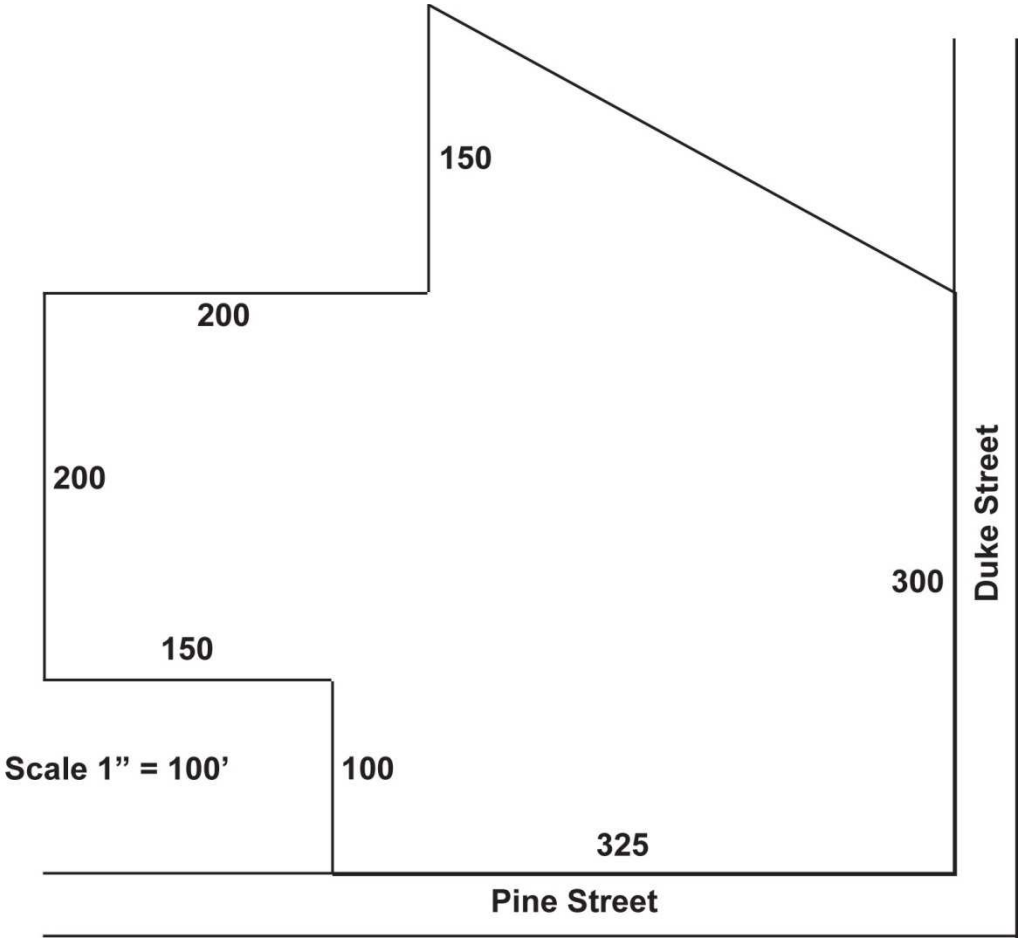


1. Determine the number of degrees in the following angles (all angles turn to the right):

AOB = ____° AOE = ____° AOH = ____°

AOC = ____° AOF = ____° AOI = ____°

AOD = ____° AOG = ____° AOJ= ____°



2a. For the above parcel, what are the number of front feet on Pine Street and Duke Street?

2b. For the above parcel, what is the area in square feet and acres? (Nearest 10 square feet and 100ths of acres)

3. Find the area of the above parcel if the sale of the map is 1” represents 400’.

4. What is the area of the above parcel if the circular portion of the parcel is a semi-circle? (Scale: 1” = 300)

5. Lot 1 is described as: beginning at a point on the west side of Cook Street, 175 feet south of the intersection of Cook Street and Mayo Avenue, thence at right angles westerly 150 feet to a point thence 88 feet due south to a large maple tree, thence 275 feet in westerly direction to the east bank of Lochead Stream, thence following the east bank of said stream northerly (assumed to be a straight line) to the bridge over said stream on Mayo Avenue thence following Mayo Avenue easterly to Cook Street and following Cook Street to the point of beginning.

   FIND:

   a. Number of front feet on Cook Street: _____

   b. Number of front feet on Mayo Avenue: _____

   c. Acreage of Lot 1: _____

   d. Number of front feet on Lochead Stream: _____

   e. Plot a reserved strip on east side of Lochead Stream 50 feet wide extending the length of the westerly boundary of this lot.

6. Lot 2 is described as: beginning at a point on the north side of Mayo Avenue 100 feet east of Lochead Stream thence due North 275 feet, thence at a right angle in an easterly direction 75 feet to a point, thence due south to Mayo Avenue and following Mayo Avenue to the point of beginning.

   FIND:

   a. Number of front feet on Mayo Avenue: _____

   b. Area of Lot 2 in square feet and acres: _____

7. Lot 3 is described as: beginning at the southeast corner of Lot 2, thence north along the east line of said Lot 2, 9 rods to a point, thence parallel with Mayo Avenue in an easterly direction 5.5 rods, thence parallel with the first mentioned boundary to the street and thence westerly to the point of beginning.

   FIND:

   a. Area of Lot 3 in square rods: _____

   b. Area of Lot 3 in acres: _____

c. Number of feet on Mayo Avenue:_____

8. Plot a triangular lot (Lot 4) whose boundaries are 120 feet on Mayo Avenue and 110 feet bordering Lot 3 on the east side.

   a. Find the area of Lot 4

      in square feet: _____

      in acres: _____

9. Plot the following subdivision: beginning at the corner of Mayo Avenue and Emery Drive, thence north in 100' intervals for 400' thence west at a right angle 150', thence southerly parallel with Emery Drive to Mayo Avenue, thence easterly to the point of beginning. Each lot will have 100' of frontage on Emery Drive and be 150' deep

   Also, plot four lots with 100' frontage each on Cook Street and 150' deep with the first lot beginning at the corner of Cook Street and Mayo Avenue.

   Find the area of one of these lots, in acres: _____

   If someone needs 1/3 of an acre to build a home, can they build on one of these lots? _____

10. Plot the following: beginning at a point on the west bank of Michael Stream where an old stone wall ends near the stream. Following the stone wall 950 feet west to the intersection of the stone wall and a small brook; thence 800 feet north along an old field to the easterly side of the same small brook; thence easterly to Michael Stream, thence following Michael stream south to the point of beginning. Excluded from the property is a 900 square foot parcel in the southwest corner.

    a. Find the area of this parcel, in acres: _____

    b. Number of feet along Michael Stream:_____

11. Draw a parcel of five lots along the north side of Old County Road, each with 200 feet of road frontage and 300 feet deep.

a. Find the area of the five lots, in square feet: _____

in acres?_____

b. Plot a 125' border strip on the east side of this parcel and adjust the road frontage for each lot so that all lots are the same size. Find the acreage of conveyed single lot: _____

12. Beginning at a point on Route 5; thence east 1,000 feet; thence south 200 feet; thence 600 feet west; thence north 75 feet; thence to the point of beginning.

Find the area of this lot, in acres: _____

Answers on page 111

Chapter 5

OTHER ASSESSMENT DUTIES

Determination of Exemptions

Property that is totally or partially exempt from taxation amounts to nearly 20% of all property in the State of Maine. In some of the larger municipalities that are service centers for a number of adjacent smaller communities, exempt property significantly affects the property tax rate. Determining whether property qualifies for exemption is an important part of the assessor's responsibility. The Maine Supreme Court has stated that "taxes are the rule and exemptions are the exception."

Benevolent and charitable institutions. The law language for this exemption is sometimes unclear. There are many court cases that define which properties and property uses are benevolent and charitable, but the opinions don't cover all options. The decision of an assessor will be based on the following qualifications:

1. The property must be owned by the institution and must be used and/or occupied solely for charitable purposes.

2. The institution must be organized for benevolent and charitable purposes.

3. The institution must be incorporated in Maine.

4. All profit must be used exclusively for the purposes for which the institution was organized and may not be distributed to officers or employees of the institution.

Literary and scientific institutions. The definition of "literary and scientific" is much clearer than charitable. Academic schools and colleges are literary, whereas schools of karate or outdoor skills have been declared by the courts not to be literary or scientific. Scientific research laboratories also may be exempt. The requirements for qualification are:

1. The property must be owned by the institution and must be used and/or occupied solely for literary and scientific purposes. A building used primarily for employee housing is not exempt.

2. Officers and employees of the institution may not receive a share of the entity's profits in excess of reasonable compensation.

3. All profits of the institution must be used exclusively for the purposes for which the institution was organized.

Unlike the exemption for benevolent and charitable institutions, a literary and scientific institution does not have to be incorporated in Maine.

Churches. This exemption is limited to the actual house of worship, vestry, and the pews and furniture therein. The exemption includes sufficient land for entry to and exit from the church, including parking lots. In addition, a parsonage is also exempt up to a value of $20,000 and personal property to a value of $6,000. Other property of a religious organization is taxable as ordinary property in a municipality.

Veterans. The following veterans are eligible for an exemption of property tax on up to $6,000 of property valuation:

1. All veterans at least 62 years old as of April 1 who have served in the U. S. Armed Forces during a federally designated war period.

2. 100% disabled veterans of any age, whose injuries are incurred while in the military.

3. Unremarried spouses, parents, and minor children of deceased veterans who would have been entitled to exemption if living.

Veterans of World War I or before are eligible for an exemption of property tax on up to $7,000 of property valuation. The property of veterans who are paraplegic (or their unremarried widows or widowers) and who received a grant from the United States Government for specially adapted housing units, may be eligible for an exemption of property tax on up to $50,000 of property valuation.

Blind persons. The residential real estate, up to the just value of $4,000, of Maine residents who are legally blind is exempt from property tax. An applicant must be legally blind as determined by a properly licensed Doctor of Medicine, Doctor of Osteopathy, or Doctor of Optometry.

Others. There are many other exemptions to all or part of property taxes that must be taken into consideration by the assessor. The statutes and Course PT102 – Maine Property Tax Law go into these exemptions in detail.

Personal Property Issues

Situs issues. Situs issues arise when personal property is located in a municipality other than the residence of the property owner. In such cases, there are rules that establish where the property is to be taxed. While exceptions exist, personal property is generally taxed as follows:

1. Personal property of a Maine resident is taxed by the municipality where that person lives.

2. Personal property of a nonresident is taxed by the municipality where the property is located. The tax is assessed to either the owner or the person in possession of the property.

The Business Equipment Tax Reimbursement (BETR) program. The BETR program provides reimbursement from the state to businesses for certain personal property taxes paid. A taxpayer, through application, requests reimbursement for taxes on qualified personal property and the municipal assessor attests that this property has been assessed and the taxes on it have been paid. The application is then forwarded to Maine Revenue Services which then reimburses the taxpayer for the taxes paid.

The Business Equipment Tax Exemption (BETE) program. The BETE program exempts certain personal property owned by an eligible business. A qualified business submits an application to the municipality by April 1 for exemption for that property tax year. Business personal property cannot qualify for both the BETR and BETE programs.

Abatements and Appeals

Poverty abatements. Municipal officers, within three years of commitment, may abate property taxes for reason of hardship or poverty, if a property owner, in their judgment, is unable to pay taxes. The municipal officers may extend the three-year abatement period, if appropriate. If the selectmen of a municipality are also the assessors, they must specifically convene as selectmen and go into executive session so that any decisions as to a poverty abatement are confidential.

When a property owner tells a municipal officer that he or she is unable to pay taxes, the officer must inform the owner of the right to request an abatement. Municipal officers must make application forms available and assist individuals making application for abatement. Decisions on poverty abatement requests must be made within 30 days of the application and all information must be kept confidential. If an abatement request is denied, the municipal officers must notify the taxpayer of his or her right to appeal.

Valuation abatements. An assessor may abate taxes within 185 days of commitment if requested, in writing, by a taxpayer. An assessor has one year from commitment to make an abatement on his or her own initiative. An assessor must respond to an abatement request within 60 days. If an assessor denies an abatement request, the taxpayer has 60 days to appeal either to the local Board of Assessment Review (BAR) or to the county commissioners if the town does not have a BAR. If the assessor does not respond to the application within 60 days, the request is deemed denied and the taxpayer may proceed with an appeal as stated above. On appeal, the local BAR or county commissioners have 60 days to make a decision. If the BAR or commissioners deny the appeal or neglect to respond within 60 days, the taxpayer may appeal to Superior Court in accordance with the Maine Rules of Civil Procedure, Rule 80B, within 30 days of denial of that appeal.

Abatements for error or mistake. An error or mistake in an assessment is defined as taxing the wrong property, taxing to the wrong party, or another, similar, issue. If the assessor assesses a property and the valuation is incorrect, this is not an error or mistake; it is a valuation error and subject to the valuation abatement process outlined above. An assessor may abate taxes for error or mistake within 185 days of commitment, if requested in writing by the taxpayer, or on his or her own initiative within one year. Municipal officers may abate taxes on written application or on their own initiative within three years of commitment.

The Real Estate Transfer Tax

The real estate transfer tax is assessed on buyers and sellers of real estate for the privilege of recording deeds and similar documents. The tax is administered by each county's Registry of Deeds

The tax is $2.20 per $500 of the purchase price, except in the case of nominal consideration or without consideration when the tax is assessed on market value. The tax is divided equally between the buyer and the seller.

The transfer of property in Maine is accompanied by a declaration of value, in which the buyer and seller state is the purchase price. This form is submitted with the appropriate tax to the registry when presenting a deed for recording. The form is then processed by the Property Tax Division of Maine Revenue Services and a copy is sent to each town's assessor.

Assessors use the declaration of value to identify sales that have occurred in their municipality, the prices paid by purchasers, the dates of sale, and other information important to the accurate assessment of taxes.

The Assessor's Calendar

Monthly:

Update transfers/review real estate transfer tax declarations of value.

Notices to new property owners, sales verification forms (include homestead exemption applications, welcome letter, or other town related information as appropriate).

Abatement and supplement reports.

Mileage reports.

Budget reviews/monitoring.

Valuation change notices to property owner.

Annually

Get sworn in.

Get training (go to Property Tax School, Property Tax Institute, assessor meetings, and other education)

City/town report - include:

- Dollar value (selling price total) of transferred property.
- Number of new lots created and number of new homes assessed.
- Number and value of veteran's and other exemptions.
- Supplements and abatements.
- Appeals defended and results.
- Dollar increase and percent increase in assessed valuation.
- Tax rate calculation.
- Equipment purchased/retired.

- Personnel changes.
- Services provided, including new directions and goals, progress.

Quarterly Duties:

August/September/October

Bring transfers up to date from April 1.

Perform sales analysis (ratio studies).

Follow up on abatement requests and problems from tax billing.

Perform supplemental assessments.

Update abatement book record and file all supplemental warrants in commitment book (consider starting a supplemental book record; it's not required, but is helpful to the assessor).

Do preliminary field work for next April 1.

Prepare Municipal Valuation Return (MVR).

Attend Property Tax School

November/December/January

November 1(or 30 days after commitment, if later) = MVR filing deadline.

State valuation preparation.

Adjustments to cost schedule for upcoming April 1 (might consider six month abatement application deadline when mailing notices of valuation decreases).

Repricing/revaluations based on schedule changes

Field reviews (especially personal property) and field work (while good weather holds).

Prepare for personal property and other taxpayer lists (36 M.R.S. § 706).

State veteran's exemption audit.

Notify the Department of Agriculture, Conservation and Forestry of Maine Tree Growth Tax Law classified land.

Budget preparation for upcoming fiscal year budget meetings.

Identify other departmental/tax base/administrative problems and apply solutions.

February/March/April

Send homestead exemption applications.

Send personal property and other inventory lists.

Follow up on personal property and list requests.

Budget meetings (town meetings).

Lien notices usually go out eight months after commitment, so be prepared for telephone calls (commit taxes in July, notices go out in March).

Post assessor's notice (not required)

April 1…….ASSESSMENT DATE

Check mobile homes, singles, and in parks.

Check construction in progress.

Quick review of most valuable properties.

Bring transfers/ownership records current to April 1.

April/May/June/July

Finish field work.

Approve/sign veteran's exemption and other exemption applications.

File homestead exemption information with Maine Revenue Services by June 1.

Price tree growth/open space land.

Check deaths to update ownership information (in addition to transfers; especially helpful for veteran's widowed spouses).

Budget for town meetings.

Prepare for commitment.

Tie up loose ends; especially check assessments for those who have received supplemental assessments or abated valuations.

Proof tax maps – make certain all new parcels are in the record, check that acreage and building adjustments due to transfers have been appropriately adjusted, verify that parcel count is correct and it matches commitment documents.

Proof valuations.

Proof exemptions.

Prove/verify all appropriations and deductions figures.

Print valuation, commitment and work books (the list of taxpayers to be committed to the collector).

After July 1 fiscal year begins: EXECUTE COMMITMENT

File all necessary paperwork in commitment book

Take calls and answer questions from tax billing.

Attend the Property Tax Institute

Get ready to do it all over again!

Chapter 5 Class Quiz

1. You are an assessor and you have committed taxes to the tax collector. The bills are sent out one month after the date of commitment. How long does a taxpayer have to request an abatement of their taxes:

   A. 185 days from receipt of the bill
   B. One year from the date of the tax bill
   C. 185 days from the date of commitment
   D. One year from the date of the tax bill

2. Personal property of a resident of Maine, regardless of where that property is located:

   A. Is generally taxed by the municipality in which the property is located
   B. Is generally taxed by the municipality where the owner resides
   C. Is only taxed if located in the municipality where the owner lives
   D. Is only taxed if located in town on April 1

3. The church exemption applies:

   A. To the sanctuary only
   B. To all lands belonging to the church organization
   C. To all property used for religious purposes
   D. None of the above

True of False

4. Poverty abatements must be granted by assessors within three years of commitment. T F

5. A taxpayer has 60 days from a denial of the assessors of an abatement to file an appeal with the appropriate authority. T F

6. All valuation abatements may be made voluntarily by the assessor within one year of commitment. T F

7. If a taxpayer's land is less than that shown on his or her tax bill, he or she may apply for an abatement due to error or mistake. T F

Answers on page 120

Chapter 6

THE MATHEMATICS OF ASSESSMENT

All approaches to value involve the use of mathematical calculations in the determination of value. Assessment administration requires knowledge of math. This chapter covers calculations helpful for an assessor to know.

Basic Math

Basic math includes multiplication, division, fractions, decimals, and percentages. This section provides only a brief overview of basic math. If you feel you need additional instruction, you may want to look into online tutorials or adult education classes. Of course, with calculators, this section is not essential for assessing duties, but knowledge the underlying process for calculator functions can add to your abilities to detect potential errors and explain calculations to taxpayers.

Fractions

A fraction is a numerical symbol that tells us into how many equal parts something or things have been divided and with how many of these parts we are concerned.

> Example: The symbol 2/5 tells us a thing has been divided into 5 equal parts and that we are concerned with 2 of those parts. The number on top is the numerator and the number on the bottom is the denominator.
>
> <u>Types of fractions</u>
>
> 1. Proper fraction – a fraction where the numerator is smaller than the denominator.
>
> 2. Improper fraction – a fraction where the numerator is equal to or larger than the denominator.
>
> 3. Mixed number – a whole number and a fraction. For example 2 2/5.

The numerator and the denominator of a fraction may both be multiplied or divided by the same number without changing the value of the original fraction.

Example: 2/5 = 4/10 both the numerator and denominator were multiplied by 2.

Addition and subtraction of fractions

Only fractions with the same (common) denominator may be added or subtracted. To add fractions with the same denominator, add the numerators and place the sum over the original denominator. Thus 3/5 + 1/5 = 4/5. To subtract fractions with the same denominator subtract the numerators and place the difference over the original denominator. Thus 3/5 - 1/5 = 2/5.

To add fractions with different denominators, you must adjust one or both to create a common denominator.

Example: To add 2/5 + 1/2, the denominators must be changed to a common denominator. Since 2 does not go into 5 evenly, you must find a number that is a multiple of both 2 and 5. The easiest way to do this is to multiply the two numbers, 2 x 5 = 10. To make sure a fraction with a common denominator is still the same as the original fraction, you must multiply both the numerator and the denominator by the same number. So, to get 2/5 to a fraction with a denominator of 10, multiply each number by 2, to get 4/10. Perform the same calculation with 1/2, multiplying both numbers by 5, to get 5/10. You can then add 4/10 + 5/10 = 9/10.

Multiplication of fractions

To multiply fractions, multiply the numerator by the numerator and the denominator by the denominator.

Example: 2/5 x 3/4 = (2 x 3)/(5 x 4) = 6/20 reduced to lowest terms = 3/10.

You should always reduce fractions to their lowest terms. To do this, find a number that is divisible into both the numerator and the denominator and divide both by that number. In the example above, divide both 6 and 20 by 2, to get 3/10.

To multiply whole or mixed numbers, change the number to an improper fraction and proceed as in the case of multiplication of fractions.

Example: 2 1/2 x 2 = (4/2 + 1/2) x 2/1 = 5/2 x 2/1 = (5 x 2)/(2 x 1) or 10/2 reduced to lowest terms = 5.

Division of fractions

To divide fractions, invert the divisor (the "divided by" number) and follow the process for multiplication of fractions.

> Example: 1/2 divided by 3/4. First, invert the divisor (3/4 inverts to 4/3). Then, multiply 1/2 x 4/3 = (1x4)/(2x3) = 4/6 or reduced to lowest terms = 2/3.

Shortcuts: rules of divisibility

All numbers are divisible by 1.

If the last digit of a number is even or 0, the number is divisible by 2.

> Example: 214, 4 is an even number, therefore, 214 is divisible by 2.

If the sum of the digits of a number is divisible by 3, the number is divisible by 3.

> Example: 324, 3 + 2 + 4 = 9. 9 is divisible by 3, therefore, 324 is divisible by 3.

If the last digit of a number is 4 and the other digits are divisible by 4, the number is divisible by 4.

> Example: 244, the last digit is 4 and 24 is divisible by 4, therefore, 244 is divisible by 4.

If the last digit of a number is 5 or 0, the number is divisible by 5.

> Example: 105, the last digit is 5, therefore, 105 is divisible by 5.

Some numbers may be divisible by more than one number so we must check each to see if the rules apply.

Decimals

Decimals are a mathematical expression of a part based on multiples of ten. The decimal point marks the transition between whole numbers to the left and tenths, hundredths, thousandths, etc. to the right.

> Example: The fraction 7/10 may be written as decimal 0.7 the fraction 7/100 may be written as decimal 0.07

Addition of decimals

When adding decimals, align the decimal points. Zeros may be added before and after the number without changing the value of a number. For example, the number .50 may be expressed as 0.500 without changing the value of that number.

Example:	32.825	=	32.825
	1.175	=	01.175
	3.90	=	03.900
	.1	=	00.100
	38.000	=	38.000

Multiplication of decimals

To multiply decimal numbers, place them and multiply them as is the case with whole numbers. Count the number of places to the right of the decimal points in both numbers being multiplied. After multiplying the numbers without concern for the decimal points, count off, from the right, the total decimal places found in the two numbers as previously determined and place the decimal point. If the product contains fewer digits than necessary, add zeros going to the left and place the decimal point the appropriate number of places to the right.

Example: 24.65 x 8 =	24.65
	x 8
Multiply 2465 x 8	19720
Enter decimal point two places from right	197.20

Example: 7.625 x 4.25 =	7.625
	x 4.25
Multiply 7625 x 5	38125
Multiply 7625 x 2 and slide over one space	15250
Multiply 7625 x 4 and slide over one space	30500
Add	3240625
Enter decimal point five places from right	32.40625

Division of decimals

When dividing two decimals, the number being divided is the dividend and the number that the dividend is divided by is the divisor. This naming is the same as in any division problem. If the divisor is a decimal, move the decimal point as many places to the right as is necessary to make it a whole number. Then move the decimal point the same number of places to the right in the dividend as with the divisor. Proceed as in any long division calculation, placing the decimal point in the answer directly above the decimal point in the dividend. For simplicity, we will not cover the steps involved in long division.

Example: 980/12.35

Move the decimal point two places to the right = 98000/1235

	79.352
Proceed as regular division:	1235 | 98000.00
1235 goes into 9800 7 times	8645
Remainder (with additional 0)	11550
1235 goes into 11550 9 times	11115
Remainder (with additional 0)	4350
1235 goes into 4350 3 times	3705
Remainder (with additional 0)	6450
1235 goes into 6450 5 times	6175
Remainder (with additional 0)	2750
1235 goes into 2750 2 times	2470

The answer, to two decimal places is 79.35. You should always go to one extra decimal place with the division calculation, to determine whether to round up or down. In this example, the extra decimal place is 2, meaning we round down to 79.35. If the additional place had been 5 or higher, we would round up to 79.36.

To change a fraction to a decimal, divide the numerator by the denominator and place the decimal point according to the rules for the division of decimals. To change a decimal to a fraction, count the places to the right of the decimal point in the decimal number. Using a denominator of 1 followed by as many zeros as there were places to the right of the decimal point and placing the original decimal number without the decimal point as the numerator, it now becomes a fraction. This fraction should then be reduced to lowest terms.

Percentages

To find the percent of a number, first change the percent to a decimal. Then multiply the decimal by the number.

Example: What is 15% of 12,500?

Change 15% to a decimal	0.15
Multiply	12500
Answer	1875

The two key words in percentage problems are – **is,** which means equal and **of,** which means multiply.

Depreciation, for purposes of assessing, is the loss of value in a structure and is generally expressed as a percentage of replacement cost. Do not confuse assessing depreciation with depreciation for income tax, which is merely a way to spread out the cost of an asset over several years. When an assessor refers to depreciation, he or she means assessing depreciation. The replacement cost less (assessing) depreciation is equal to the remaining value of a structure.

Example: A dwelling has a replacement cost of $150,000. The structure has depreciated 25%. What is the replacement cost less depreciation of the dwelling?

$150,000 (replacement cost) x .25 (25% depreciation) = depreciation value = $37,500

The remaining value = replacement cost – depreciation = $150,000 - $37,500 = $112,500

Another way of expressing this calculation is:

remaining value = replacement cost x (1 – depreciation percent)

In this example, remaining value = $150,000 x (1 – 0.25)

= $150,000 x 0.75 = $112,500

To find what percent one number is of a second number, divide the second number (a portion) by the first (the whole). Move the decimal point in the answer two places to the right and the result is the answer as a percent.

Example: What percent of 12,500 is 10,625?

Divide the second number by the first	10625/12500 = 0.85
Move the decimal point two places to the right	85%

Condition is another way of expressing replacement cost less depreciation as a percentage. Condition is equal to 1 – depreciation (expressed as a decimal). When you have the replacement cost and the remaining value of a structure, you can determine the condition percentage.

Example: A dwelling has a replacement cost of $150,000. The remaining value of the structure $100,000. What percent condition is the structure in?

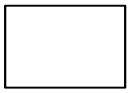
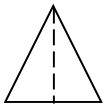
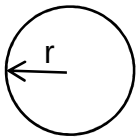
Using the remaining value calculation from above:
remaining value = replacement cost x (1 – depreciation percent)
$100,000 = $150,000 x condition

Dividing both sides by $150,000:
$100,000/$150,000 = ($150,000 x condition)/$150,000 = condition
condition = $100,000/$150,000 = 0.6667 or 66.67%

Or: *condition = remaining value/replacement cost*

Area

Geometric Areas – The following are formulas that are used for calculating the area of non-rectangular geometric figures encountered by assessors in evaluating properties.

Name	Shape	Area Computation
Rectangle		the length multiplied by the height
Triangle		½ of the length multiplied by the height
Circle		πr^2 pi (3.1416) times the radius squared

Units of Measure

When working with units of measure, all measures must be converted to the same unit before any mathematical computations may be made.

A mill is equal to one thousandth of a dollar, $0.001 or one tenth of a cent, 0.1¢.

Area is equal to length times width and can be in square inches, square feet, or some other measurement.

Volume is equal to length times width times height and can be in cubic feet, cubic yards, or some other measurement.

Linear Measure - The assessor must be familiar with the following linear measurements expressed in inches, feet, yards, rods, miles, links, and chains. The assessor must be able to convert linear measurements from one unit to any of the others readily.

One foot	=	12 inches
One yard	=	3 feet
	=	36 inches
One rod	=	**16.5 feet**
		5.0292 meters
One chain	=	100.084 links
		66 feet
		20.1168 meters
		4 rods
One meter	=	39.3701 inches
		3.2808 feet
		1.0936 yards
One kilometer	=	3,280.8399 feet
		1.093.6133 yards
		1,000 meters
		0.6214 miles
One mile	=	**5,280 feet**
		1,760 yards
		320 rods
		80 chains
		1.6093 kilometers

Area Measure - The assessor must be familiar with the following area measures expressed in square inches, square feet, square yards, square rods, square miles, acres, and square chains. The assessor must be able to convert area measures from one unit to the others.

One square foot	=	144 square inches
One square yard	=	**9 square feet**
One square rod	=	272.25 square feet
One square chain	=	16 square rods
One square meter	=	10,000 square centimeters
		10.7639 square feet
		1.1960 square yards
One acre	=	**43,560 square feet**
		4,840 square yards
		160 square rods
One hectare	=	2.4711 acres
		107,639.1042 square feet
		11,959.9005 square yards
One square kilometer	=	0.3861 square miles
		247.1054 acres
		1,000,000 square meters
One square mile	=	**640 acres**
		2.5900 square kilometers

Volume Measure - The only measures of volume with which this course will be concerned are those expressed in cubic inches, cubic feet, cubic yards, and cords.

One cubic foot	=	1,728 cubic inches
One cubic yard	=	27 cubic feet
One cord	=	128 cubic feet (4’ high x 4’ wide x 8’ long)

Chapter 6 Class Quiz

Fractions

You may use your calculator, but show the process to get to the answer.

1. Arrange the following, largest to smallest:

   a. 3/4 b. 5/8 c. 25/32 d. 13/16

   _____ _____ _____ _____

2. Add or subtract each of the following and reduce each to its simplest form:

   a. 1/2 + 5/8 = _____ b. 3/4 + 3/8 = _____

   c. 5/8 - 3/16 = _____ d. 15/16 - 3/4 = _____

3. For each of the following, state whether divisible by 2, 3, 4, or 5. A number may be divisible by more than one.

   a. 615 _____ b. 42 _____ c. 243 _____ d. 71 _____

4. Multiply each of the following and reduce to its simplest form:

   a. 3/8 x 5/4 = _____ b. 1/2 x 7/16 = _____

   c. 3 1/2 x 4 1/2 = _____ d. 3 x 3 1/2 = _____

5. Divide each of the following and reduce to its simplest form:

   a. 3 1/2 ÷ 2 = _____ b. 1/2 ÷ 3/5 = _____

   c. 3 ÷ 3/8 = _____ d. 3/8 ÷ 1/2 = _____

   e. 5/8 ÷ 3/8 = _____

Decimals

1. Write one hundred twenty five thousandths as a decimal: _____

2. Add: 1.375 + 0.625 + 12.125: _____

3. Multiply: 0.625 x 12.5: _____

4. Divide: 0.375 ÷ 0.05: _____

5. State 5/8 as a decimal: _____

6. State 0.375 as a fraction: _____

7. State 1.25 as a percentage: _____

8. State 52.5% as a decimal: _____

9. State 37.5% as a fraction: _____

10. State 5/8 as percent: _____

Percentage

1. What is 22.5% of 20,000? _____

2. 1,200 is what percent of 24,000? _____

3. A structure has depreciated 25%. Compute the depreciation if the replacement cost of the building is $18,600.

   _____

4. A dwelling has a replacement cost of $24,500. The replacement cost less depreciation of the building was $20,825. In what percent condition is the structure?

   _____

5. A structure has depreciated $1,850. The replacement cost less depreciation of the building is $16,650. What is the percentage of depreciation?

   _____

Units of Measure

1. How many mills are there in 72½ cents? _____

2. $0.035 = _____ mills.

3. How many cubic yards of fill will it take to fill a hole 7½ feet deep, 2 yards long and 36 inches wide?

   _____

4. Forty square rods is what part of an acre? _____

5. 94½ cubic feet = _____ cubic yards.

6. A parking lot was computed to have 650 square yards of area. In the area parking lots are assessed at 25¢ per square foot for asphalting. What would the valuation be?

   _____

7. 9 square yards = _____ square feet.

8. 108,900 square feet = _____ acres.

9. 3 rods = _____ feet.

10. 1,760 yards = _____ rods.

Assessor Problems

1. Compute the following areas:

   a. A building 24 feet wide and 40 feet long.

   b. A porch 12 feet wide and 14 feet long.

   c. A garage 24 feet wide and 24 feet long.

   d. A square parcel of land 12 rods each side.

   e. A triangular parcel of land with a base of 16 feet and an altitude of 12 feet.

2. Compute the cost of replacement less depreciation of a building whose adjusted cost of replacement is $8,750 and which is subject to further allowance of 10% for its old fashion character and 20% for location.

3. Compute the area of a rectangular parcel of land 120 feet wide and 180 feet deep.

4. Compute the value of a parcel of land 120 feet wide and 180 feet deep that is rectangular in shape, if an adjacent parcel 40 feet wide and 180 feet deep sold for $1,500 and all land was selling for the same price whether in large or small sized lots.

Answers on page 121

Chapter 7

MARKET APPROACH

In practice, assessors will value residential property using the cost approach and confirm the valuation through the market approach. This combination of approaches can sometimes be a balancing act, because often the cost schedules an assessor uses are several years old, while the sales used in the market approach are more recent. The income approach is generally not applicable to residential property.

Valuation Methods

1. Three approaches to value: Cost approach, market approach, income approach.

2. Market price vs. market value

Uses of market approach in the other two approaches (cost approach and income approach)

3. Definition of market approach

4. Reliability of market approach

    a. Contacts for verification of data

    b. Reason for sale

    c. Financing of sale

    d. Description of property

5. Principle of substitution

    a. What deductions can we make from the definition?

        (1)
        (2)
        (3)
        (4)
        (5)
        (6)

6. Weaknesses of the market approach

    a. No two properties are exactly alike

    b. There is often a lack of comparable sales

    c. Sales for certain types of properties (such as waterfront) may be scarce

    d. There is seldom an adequate number of sales

    e. Records - keeping of sales information

    f. Mechanics of the market approach

The Subject Property (the property we are appraising)

When comparing recent sales to determine the estimated value of a subject property, differences between the subject and the comparable sale are always accounted for by adjusting the value of the comparable property. If the sold property is better than the subject property, the sale price of the sold property is adjusted down. If the subject property is better the sale price of the sold property is adjusted up.

Date of the appraisal is 1987

One story, brick veneer single

Age - 11 years old - built in 1976

Area - 1020 square feet

Five rooms - one bath

Heat - one furnace forced hot air with ducts

One-car detached frame garage

Inside lot 60' x 174'

COMPARABLES			
SUBJECT PROPERTY	SALE #1	SALE #2	SALE #3
1 STORY BR. VEN. BUILT 1976	1 STORY BR. VEN. BUILT 1977	1 STORY BR. VEN. BUILT 1976	1 STORY BR. VEN. BUILT 1976
5 ROOMS – 1 BATH	5 ROOMS – 1 BATH	5 ROOMS – 1 BATH	6 ROOMS – 1 BATH
1020 SQ. FT. AREA	1126 SQ. FT. AREA	970 SQ. FT. AREA	1268 SQ. FT. AREA W/ 10’ x 20’ ENCL. PORCH
FORCED HOT AIR HEAT	H.W. BASEBOARD HEAT	FORCED HOT AIR HEAT	GAS FIRED FLOOR FURNACE
1 CAR FRAME GARAGE	2 CAR FRAME GARAGE	1 CAR ATTACHED BR. VEN. GARAGE	1 CAR ATTACHED BR. VEN. GARAGE
INSIDE LOT 60’ x 174’	INSIDE LOT 60’ x 150’	INSIDE LOT 60’ x 150’	INSIDE LOT 60’ x 150’
DATE OF APPRAISAL 2016	SOLD 2016 $130,000	SOLD 2016 $100,000	SOLD 2016 $110,000

ADJUSTMENTS				
	SUBJECT	SALE #1	SALE #2	SALE #3
DATE OF SALE		NO ADJUSTMENT REQUIRED – ALL SALES ABOUT SAME TIME (OTHERWISE A PERCENTAGE ADJUSTMENT WOULD BE NECESSARY)		
LOCATION		ALL WITHIN SHORT DISTANCE OF EACH OTHER		
AGE & CONDITION	11 YEARS OLD BUILT 1976	10 YEARS OLD BUILT 1977 SUBJECT: -$4,500	SAME AS SUBJECT NO ADJUSTMENT	11 YEARS OLD, BUT POOR CONDITION SUBJECT: +$2,000
SIZE AND NUMBER OF ROOMS	5 ROOMS – 1 BATH 1010 SQ. FT.	SAME AS SUBJECT, BUT 1126 SQ. FT. SUBJECT: -$7,000	SAME EXCEPT 970 SQ. FT. SUBJECT: +$3,000	6 ROOMS – ENCL. PORCH, 1268 SQ. FT. SUBJECT: -$15,000
MECHANICAL EQUIPMENT (HEAT)	FORCED HOT AIR FURNACE WITH DUCTS	HOT WATER BASEBOARD – BETTER SUBJECT: -$6,000	SAME	FLOOR FURNACE NOT AS GOOD SUBJECT: +$2,500
GARAGE	1 CAR – FRAME	2 CAR – FRAME SUBJECT: -$5,000	1 CAR – BR. VEN. AT. BETTER SUBJECT: -$1,500	1 CAR – BR. VEN. ATT. – BETTER SUBJECT: -$1,500
LOT SIZE	60’ x 174’	60’ x 150’ SUBJECT: +$2,000	60’ x 150’ SUBJECT: +$2,000	60’ x 150’ SUBJECT: +$2,000

ADJUSTMENTS

SALE #1 $130,000 SALE PRICE		SALE #2 $100,000 SALE PRICE		SALE #3 $110,000 SALE PRICE	
-$4,500	AGE AND CONDITION	+$3,000	SQ. FT. AREA	+$2,000	CONDITION
-$7,000	SIZE	+$2,000	LOT SIZE	+$2,500	HEAT
-$6,000	HEAT	$5,000	ADDITIONS	+$2,000	LOT SIZE
-$5,000	GARAGE	-$1,500	GARAGE	$6,500	ADDITIONS
-$22,500	DEDUCTIONS	$3,500	NET ADJUSTMENT		
+$2,000	LOT SIZE			-$15,000	SIZE AND ROOMS
-$20,500	NET ADJUSTMENT			-$1,500	GARAGE
				-$16,500	DEDUCTIONS
				+$6,500	ADDITIONS
				$10,000	NET ADJUSTMENT
	$130,000		$100,000		$110,000
LESS	$20,500	PLUS	$3,500	LESS	$10,000
	$109,500		$103,500		$100,000

SITE VALUATION – MARKET APPROACH (COMPARATIVE METHOD)

SITE	SALE DATE	SALE PRICE	SQUARE FOOT AREA	PRICE PER SQ. FT.	ADJUSTMENTS TIME	LOCATION	SIZE	PHYSICAL CHARAC-TERISTICS	ADJ. SQ. FT. PRICE
A	5-8-63	$10,000	4,000	$2.50	+5%	+5%	+5%	+10%	$3.13
B	4-4-66	$9,000	2,727	$3.30	SAME	SAME	-5%	+5%	$3.30
C	2-9-66	$11,000	3,437	$3.20	SAME	SAME	SAME	SAME	$3.20
D	8-7-66	$9,500	3,393	$2.80	SAME	+10%	SAME	+5%	$3.22
E	2-1-63	$10,500	3,500	$3.00	+5%	SAME	SAME	SAME	$3.15

Indicated Price Per Square Foot of Subject Site .. . . . $3.20 . . . . . Site C was picked because it required no adjustments, and so was the best and most similar comparable.

Further explanation of the means of adjustment for Site A; the sale took place 3 years previous to the date the appraisal is being made. There is an indication in the market that if Site A were to sell today, it would sell for 5% more than it did three years ago. Therefore, the sales price must be adjusted upwards 5% to make it comparable to today's market in which the value of the subject is being sought. Location and size are judged to require a 5% adjustment also. Physical characteristics are judged to be 10% less desirable in Site A as compared to the subject. Therefore, Site A's sale price must be adjusted 10% upward in order to make it comparable to the subject. Adjustments are difficult to make on sales that are over 3 years old and sometimes less than 3 years old. The adjustment has to be made to the property as it was on the sale date, and it is often difficult to determine just what the exact condition of the property was on the date of sale if the sale is a few years old.

Source: Syllabus for Training Course for Assessor/Appraisers, conducted by The International Association of Assessing Officers, page 66.

Investment Type Property

Generally in the appraisal of an investment type property (commercial, industrial, apartment) a unit or units of comparison is derived from the sales analysis which will produce an indication of the market value of the subject. The following table was used in a warehouse appraisal.

SALES NO.	DATE	SALES PRICE	ANNUAL RENT AT DATE OF SALE	GROSS INCOME MULTIPLIER	SQ. FT. AREA OF BLDG.	SALES PRICE PER SQ. FT.	ADJUSTMENTS TO SUBJECT				INDICATED PRICE PER SQ. FT. SUBJECT
							LOCATION	PHYS. COND.	SIZE	TIME	
1	63	$62,400	$7,800	8.0	7,800	$8.00	EQUAL	EQUAL	EQUAL	EQUAL	$8.00
2	61	$67,500	$9,000	7.5	10,000	$6.75	EQUAL	EQUAL	+ 8%	+10%	$7.97
3	61	$48,000	$6,000	8.0	6,400	$7.50	EQUAL	EQUAL	-5%	+10%	$7.88
4	59	$43,200	$5,100	8.5	6,000	$7.20	EQUAL	EQUAL	-5%	+ 20%	$8.28

From the above table we can derive two units of comparison, a gross income multiple from the fourth column and a per square foot of building area from the last column.

Gross income multiple equals 9.0
Indicated price per square foot of building equals $8.00

Value by gross income multiple
into sale price.
Annual gross income of subject $7,500 x 8 = $60,000

NOTE: To determine gross income multiplier, divide annual rental

Value by square foot unit of comparison

Building area of subject $7,500 x $8.00 = $60,000

Example: Sale No. 1

$$7800 \overline{)\ 62{,}400}^{\ 8}$$

Estimated value by market approach $60,000

Source: Syllabus for Training Courses for Assessor/Appraisers, conducted by The International Association of Assessing Officers, Pg. 65.

Points to Remember

Easy to Use	Difficult to Use
1. When sales are plentiful	1. When there are only a few sales
2. In the case of residential property	2. In the case of commercial, industrial or income property
3. When many sales of very similar property is available	3. When sales are of dissimilar type properties and require many adjustments
4. If good records are kept in the assessor's office (field cards, maps, sales data, transfers)	4. When the records kept in the assessor's office are inadequate

5. The value estimated is only as good as the data available

6. The value estimated is only as good as the analysis of the data

7. Market data is history

8. Must be current history indicative of the present market and its motivating forces

9. The market approach does not produce an exact figure, but rather an estimate which will fall within a bracket or range.

Weaknesses

1. No two properties are exactly alike or identical. Even if the properties are adjacent and the structures similar, the difference in location can create a difference in value.

2. Desirability of the neighborhood. The nature of the adjacent of immediate neighborhood may vary.

3. The heating plants, plumbing, and other special equipment may be different.

4. The amount of depreciation will affect value. Care, maintenance and repairs will vary because of different owners even though the house may have been built at the same time and with the same grade of construction.

5. Similar properties may vary in value because they face in different directions, command different views, etc.

6. The difficulty in obtaining all the information pertaining to the circumstances surrounding each sale.

7. Difficulty in finding sales of comparable properties.

8. In the case of income properties, the difficulty in obtaining facts about rental charges, terms of leases, and similar information needed to make an analysis.

Chapter 8

PUBLIC RELATIONS IN THE ASSESSOR'S OFFICE

General Considerations

The work of the assessor goes well beyond the discovery, listing, and valuation of real and personal property. The municipal assessor must also be able to convey this information in a manner that convinces the public of the professionalism, accuracy, and integrity of the assessor's office.

Taxpayers, attorneys, politicians, and the media all pay attention to local property tax issues. In light of this attention, it is important that the assessor demonstrate fairness and equity in the assessment process. A well thought out public relations program will reduce a taxpayer's anxiety, anger, and/or confusion.

Assessors deal with many segments of the public:

1. Property owners (taxpayers)
2. Attorneys
3. Real estate appraisers
4. Real estate brokers
5. Lending institutions
6. Government officials and agencies
7. Tax representatives
8. The media

Each of these groups has a different level of knowledge about property assessment. Property owners may know very little about assessment. On the other hand some real estate professionals may understand the assessment function and technical language as well as the assessor. Each individual seeks a different level of information. Individual property owners may be concerned only with their own properties, while a real estate appraiser may be interested in properties throughout the municipality. Appraisers are also usually interested only in those properties that have sold. Lending institutions are interested in properties that they are financing.

Elements of Public Relations

You, as an assessor, should treat the public as you would like to be treated. Try to see a situation from the customer's point of view. There are three basic elements to meeting this goal.

1. Availability. The assessor must be available to answer questions at reasonable hours for the size of the taxpayer public and for the time of year. Certainly the weeks after the sending of tax bills mean increased communication with the public who wish to know why an assessment has increased, how the increase was determined, the factors which influenced the decision and many other matters. Other times will require extra hours of an assessor's time to create a good relationship with the public. Note: a person applying for an assessment position needs to be aware of this when negotiating a contract for employment.

2. Honesty. This has to be the most important element of effective public relations. Once the assessor is perceived as dishonest, evasive, or untruthful, it will become extremely difficult to gain the public's understanding and cooperation. An assessor who does not follow through on a promise or is inconsistent will be perceived as dishonest. If an assessor develops and maintains a reputation for honesty and integrity, the public will develop faith in the assessor and the accuracy of assessments, make fewer complaints, and be more cooperative.

   If you promise to review a property with the intention of attempting to avoid an appeal, you must do so timely and advise the taxpayer as to his or her appeal rights.

   If you tell one property owner that the assessment is based on one set of facts and procedures and then tell a neighboring property owner something else, you will likely seriously damage your credibility.

   You need to admit when you do not know something, attempt to get the correct information and provide that information to the taxpayer as soon as possible. If there is delay, explain the reason for that delay.

3. Careful Listening. When meeting with a taxpayer or other party, the assessor must pay close attention to what is said and not try to anticipate what the person means. Giving your complete and undivided attention conveys the message that what the person has said has been heard. Ask questions to make sure you understand the issues. Otherwise you may waste time gathering incorrect information or answering the wrong question.

Try to have such meetings in a private office or conference room so that the ambient noise of the municipal office does not interfere with what is being said or heard.

Qualities of the Assessor

To properly represent the public face of the office, an assessor must have five basic traits, knowledge, tact, patience, objectivity and an ability to communicate.

Knowledge. The knowledgeable assessor is able to explain technical concepts using terms that any person can understand. The assessor should not appear condescending, but always treat each person with dignity and respect.

Tact. Tact is the ability to say the appropriate thing when dealing with others without being offensive or abrasive. It requires skill in dealing with new and difficult situations or persons.

Patience. Persons dealing with an assessor are often angry and sometimes verbally abusive out of their own frustration in what they perceive as an unfair situation. The skilled assessor maintains his or her poise and self-control, using sincerity, empathy and firmness in getting a taxpayer to understand his or her situation. It is important for the assessor to remember that the taxpayer may be completely unacquainted with basic aspects of assessing that have become second nature to the assessor.

Objectivity. When dealing with members of the public, treat everyone with respect for their point of view. Do not ever make a conversation with a taxpayer personal. Remember that people will always complain about taxes, regardless of who sits in the assessor's chair.

Ability to Communicate. Effective communication requires both verbal and writing skills.

Verbal skills. Verbal skills involve talking to taxpayers, talking to the public and talking to the media.

The four basic elements of talking to taxpayers are:

1. Listening;

2. Asking if the taxpayer has any more information to share;

3. Restating the issue, to make sure you understand it; and

4. Addressing the issue.

Several times a year you will be called on to speak either to other town officials or the public on the important issues facing assessors. There are some basic elements an assessor needs to follow to do this job adequately.

1. Speak clearly and in complete sentences. Avoid "ums" and "ahs" in speaking.

2. Avoid mannerisms that may detract from the listening concentration of your audience.

3. Involve your audience in your speaking assignment through open-ended questions or requests for information. If a person's questions are on point, be prepared to answer spontaneously.

4. Know your subject matter well enough so that you cannot be trapped by your audience.

When speaking with newspaper or other media representatives, assessors should remember that the media, like taxpayers, may not be aware of all aspects of assessing. You should be sure of your facts, explain your answers fully, and avoid judgmental or opinionated statements. Remember that what you say may end up in the local paper or on the news for everyone, including taxpayers and other municipal officers to see.

Writing skills. Written communication is the assessor's second most frequent contact with the public. The advantage of written communication is that you generally have more time to research a question and to think about your response. Always respond to a letter or email in writing unless the taxpayer asks a simple question or requests that you telephone him or her. Even then, confirm such a conversation with a note.

There are four steps to answering a letter or email, timeliness, research, actual writing, and revising.

1. **Timeliness**. When you receive a letter or email requesting an answer, immediately establish a time limit for your answer. You may wish to note this as you record the time and date received. If a response will take extra time because of its complexity, notify the writer of your estimate as to the time of the answer.

2. **Research**. Research has two steps. First, read and reread the letter or email to make sure you understand the issues being addressed. If you have questions, you may call the party or write asking for more information. Once you have identified the issues, develop an answer.

3. **Actual writing**. Writing must be clear and concise, but with a professional tone, even if the party writing you has been otherwise. The writing should restate the issues as you understand them, give adequate answers to these issues and,

when possible, include information that will add to the party's basic knowledge of the issues.

4. **Revising**. When writing a complex letter, after writing the initial draft, set the letter aside for a while and then go back and look at it from the point of view of revision. In many cases you will find that there is a better way to get your point across than you had originally written. Check all grammar and spelling as well. Part of your credibility is based on the accuracy of your correspondence.

Summary

An assessor has many opportunities to contact the public and may be known inthe community as well as any other official. The assessor's job is to decide on what taxes must be assessed to each taxpayer in relation to their fair share of the common expenses of the community. This job, technical in nature, has the potential of creating considerable controversy with some taxpayers. Good public relations both in face-to-face meetings and in writings and other public contact can make the job much easier and show the assessor as honest, professionally competent, and respected in his or her municipality.

Chapter 9

CERTIFICATION AND EDUCATION

Training of Assessors

36 M.R.S. § 318 states: “The State Tax Assessor may establish, either on his or her own initiative or in conjunction with professional or educational agencies, or both, a program of training to meet the needs of the State of Maine for a sufficient supply of competently trained assessors. . . For such purposes, the State Tax Assessor may designate what programs either within or outside the State are acceptable for these training purposes.”

It is not necessary to take any of the courses offered by the state to become a Certified Maine Assessor (CMA) or a Certified Assessment Technician (CAT). The only requirement is the passage of the qualifying examination.

Examinations

The Property Tax Division holds qualifying exams for assessors at least four times each year. Those exams will be announced at least one month before the scheduled date. The exams test an applicant's knowledge of property tax law and techniques of assessment.

The CMA examination is an eight-hour examination broken into five parts. Part I covers property tax law and the other four parts cover various areas of assessor knowledge taught in the three courses developed by the Property Tax Division (PT101 – Introduction to Property Tax Assessment, PT102 – Maine Property Tax Law, and PT103 – Valuation of Real Estate). A minimum of 70% must be scored on each part to pass the entire exam; but a grade of 80% or higher on one or more parts may be held for up to 18 months while a person attempts to pass all other parts of the exam.

The CAT examination is also an 8 hour examination in five parts with less emphasis on law and administration. The passing grade is an average of 70% on all five parts. There is no partial carryover with this exam; the entire exam must be passed in one sitting.

Certification and Certification Renewal

The State Tax Assessor issues a certificate of eligibility to any applicant who passes the CAT or CMA exam. The certificate declares that the applicant is a Certified Maine Assessor or Certified Assessment Technician and has the basic knowledge required to be an assessor. Certificates are renewed annually provided the assessor completes at least 16 hours of classroom training approved by the State Tax Assessor each year. The Property Tax Division keeps records of the status and continuing education of all assessors. It is the assessor's responsibility to understand the laws concerning certification and to submit qualifying continuing education credits each year. The Property Tax Division allows for an inactive/retired certification status. To have your certification placed on inactive status, you must request it, in writing, from the Chief of Training and Certification.

If an assessor is unsure whether a course will be accepted for recertification credit, he or she should contact the person providing that course and confirm that the course has been approved by the Chief of Training and Certification. Any certificate issued by the State Tax Assessor may for cause be revoked after hearing and findings of fact. In revoking a certificate, the State Tax Assessor will give the assessor 30 days' written notice of the time and place of the hearing and the reason for the investigation.

ANSWERS TO CLASS QUIZZES

Chapter 1 Class Quiz Answers

1. Real property includes all of the following except:

   A. Ownership of a life estate in land
   B. A free-standing brick wall
   C. An attached garage
   D. A portable air conditioner

2. An adequate legal description in a deed is a description:

   A. Of the real estate including all fixtures.
   B. Of the improvements including all fixtures
   C. Suitable for describing the property to a real estate broker
   D. Of the boundaries of the property by which a reasonable person knows what property is described.

3. Ownership of real estate includes:

   A. Rights to use the surface, subsurface and the air over it
   B. Rights to lease the land or improvements
   C. Trees growing on the land
   D. All of the above

4. The right of a landowner and his or her heirs to occupy a parcel of real estate forever is called:

   A. A qualified estate
   B. A life estate
   C. An estate in fee simple
   D. An indeterminate estate

5. By what authority may municipalities pass laws restricting landowners in certain uses of their land?

   A. Manifest destiny
   B. The law of nuisance
   C. Police power
   D. Governmental fiat

6. Escheat is the power of government to take your property without giving you just consideration. T F

7. A warranty deed guarantees that the appliances in the home work at the time of the transfer T F

8. An estate in severalty is an estate owned by one person. T F

9. A leasehold estate at sufferance does not allow the landlord to evict the tenant until the lease is terminated. T F

10. A warranty deed guarantees that the grantor will defend the deed against all title defects of any person in the chain of title. T F

Chapter 2 Class Quiz Answers

1. The three basic principles that create value are:

   A. Price, demand, location
   B. Utility, price, demand
   C. Utility, scarcity, desirability
   D. Desirability, price, utility

2. The relationship between an object desired and a potential purchaser is known as:

   A. Price
   B. Value
   C. Exchange
   D. Demand

3. Market value is defined by all of the following elements except:

   A. The buyer and seller are motivated
   B. A reasonable time is allowed for exposure to the market
   C. The assessed value of the property is based on the price
   D. The price represents normal consideration for the property

4. Which of the following contains substantial elements of an appraisal for tax assessment purposes:

   A. Purpose of the appraisal, discovery of the property, classification of the property
   B. Discovery of the property, classification of the property, data collection and analysis
   C. Classification of the property, data collection and analysis, price verification
   D. Data collection and analysis, price verification, purpose of the appraisal

5. The four great forces are

   A. Highest and best use, governmental, social, physical
   B. Physical, economic, governmental, social
   C. Supply and demand, physical, governmental, economic
   D. Anticipated use, governmental, social, physical

6. Under the Tree Growth Tax Law, a parcel must contain a minimum of ten forested acres, be maintained for commercial harvesting and have an up-to-date forest management plan. T F

7. The cost approach asks the assessor to use the principle of substitution to determine the most probable market value of a property. T F

8. The prices of properties tend to increase with an increase of supply of similar properties T F

9. The principle of anticipation states that market value is the present worth of all anticipated future benefits. T F

10. Open space classification is only available for lots over five acres that contain scenic resources, public recreation opportunities, or preserve wildlife habitat. T F

Chapter 3 Class Quiz Answers

1. The most important records used by an assessor to determine the assessed value are:

   A. Economic statistics, building codes, property surveys, tax maps
   B. Property record cards, building codes, income data, sales records
   C. Tax maps, property record cards, an assessment manual, property lists
   D. Inspection reports, tax rates, tax maps, cost manuals

2. To prepare accurate tax maps, the assessor needs:

   A. Deeds, surveys, sales data, zoning regulations
   B. Inspection reports, zoning regulations, building codes
   C. Property record cards, deeds, surveys
   D. Topographic maps, sales data, an assessment manual

3. In determining the value of parcels of land, the assessor must consider:

   A. The effect of width and depth of each parcel
   B. The effect of location within the municipality and neighborhood
   C. The effect of topography
   D. All of the above

4. An engineer's scale has divisions of:

   A. Feet and meters
   B. Meters and centimeters
   C. Feet, inches, and 10ths of inches
   D. Feet, inches, and 16ths of inches

5. Municipal tax maps should be revised:

   A. Whenever a municipality accomplishes a revaluation
   B. Annually as of April 1
   C. Annually prior to town meeting
   D. Whenever the Property Tax Division requests it

6. If a municipality needs to raise $2,000,000 and the taxable valuation of the municipality is $100,000,000, the minimum mill rate is:

   A. 0.05
   B. 0.02
   C. 0.025
   D. None of the above

7. The valuation book:

   A. Describes each property in detail for valuation purposes
   B. Is used to develop the values of real property rights
   C. Is the document giving the values of property from which the tax rate is calculated
   D. Is the work product used by assessors in the field

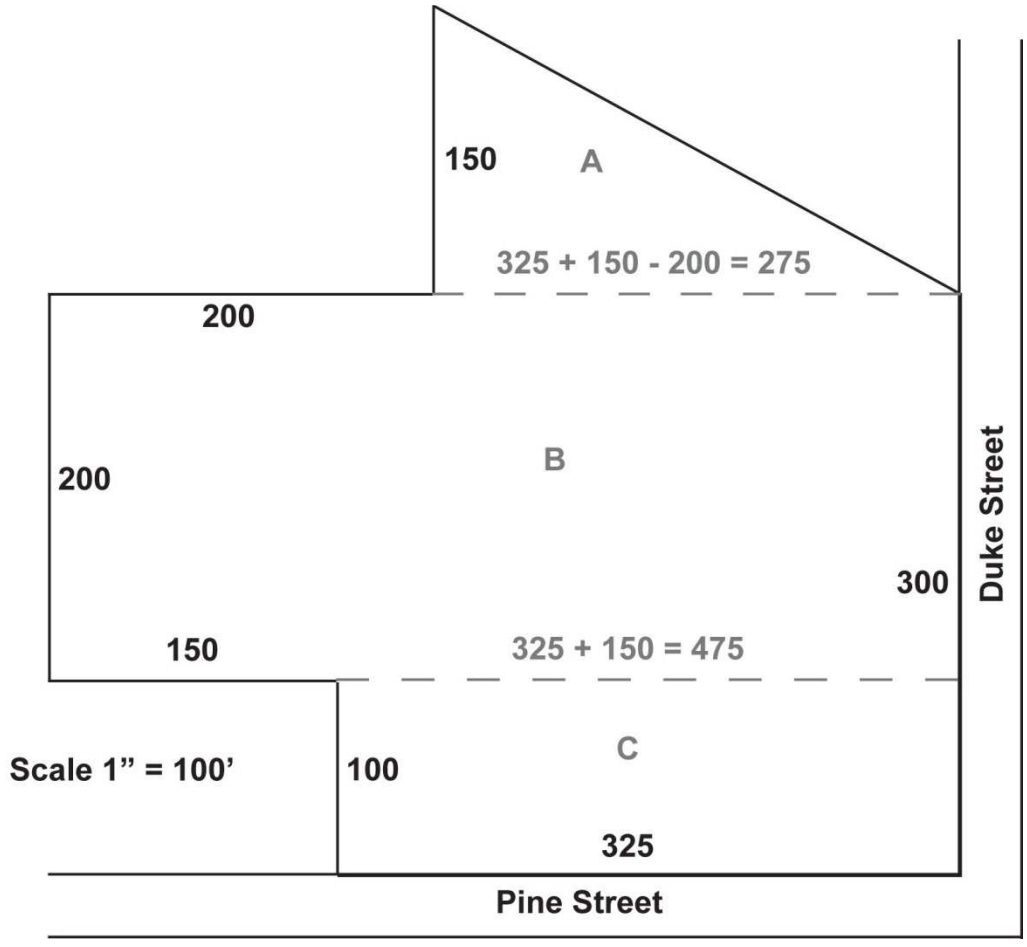
8. When performing an on-site property inspection, which of the following is least useful in developing the property value?

   A. The topography of the site
   B. The style of the building
   C. The cosmetic treatment of the rooms
   D. The utility of the basement

Chapter 4 Class Quiz Answers

1. Determine the number of degrees in the following angles (all angles turn to the right)

AOB = **33°**	AOE = **163°**	AOH = **264°**
AOC = **90°**	AOF = **180°**	AOI = **270°**
AOD = **144°**	AOG = **255°**	AOJ= **325°**

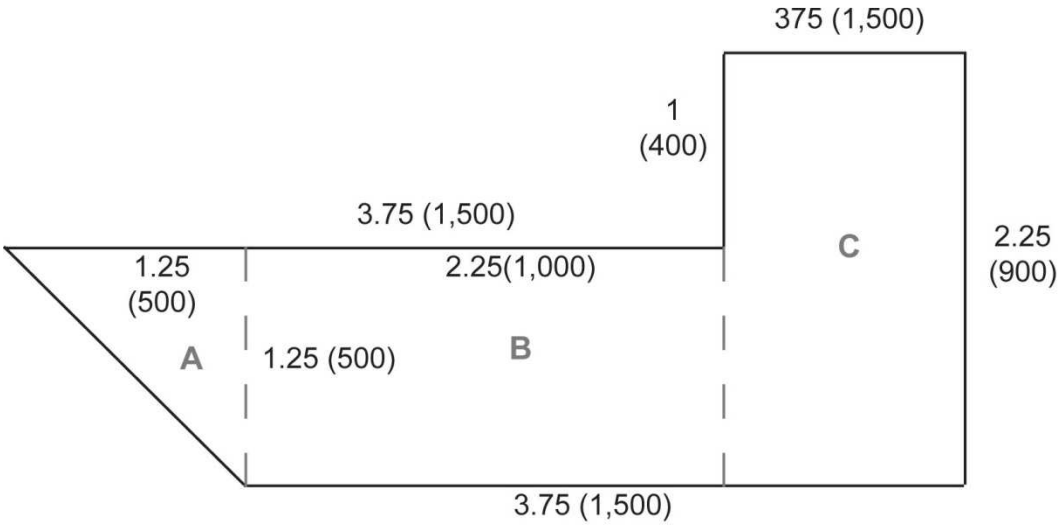


2a. For the above parcel, what are the number of front feet on Pine Street and Duke Street?

325'; 300'

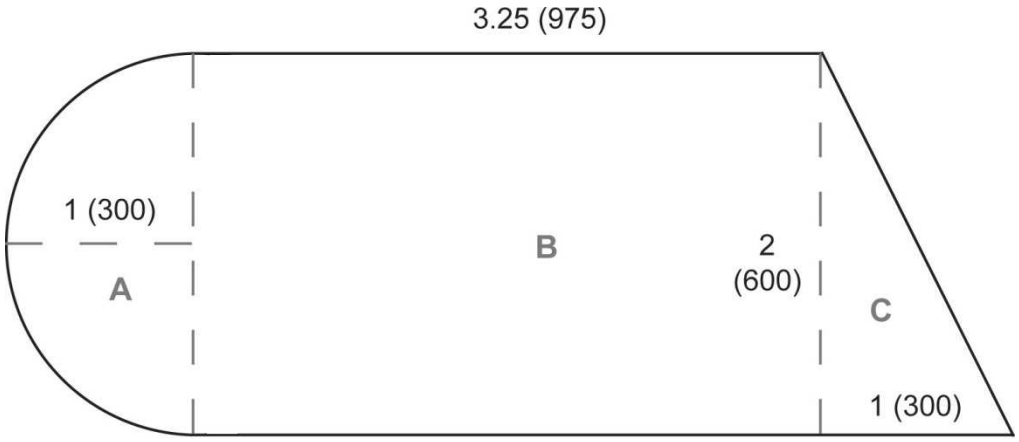
2b. For the above parcel, what is the area in square feet and acres? (Nearest 10 square feet and 100ths of acres)

Area = A + B + C
A = (150’ x 275’)/2 = 41,250/2 = 20,625 sq ft
B = 200’ x 275’ = 95,000 sq ft
C = 100’ x 325’ = 32,500 sq ft
Area = 20,625 + 95,000 + 32,500 = <u>148,125 sq ft</u> = 148,125/43,560 = <u>3.40 acres</u>



3. Find the area of the above parcel if the sale of the map is 1” represents 400’.

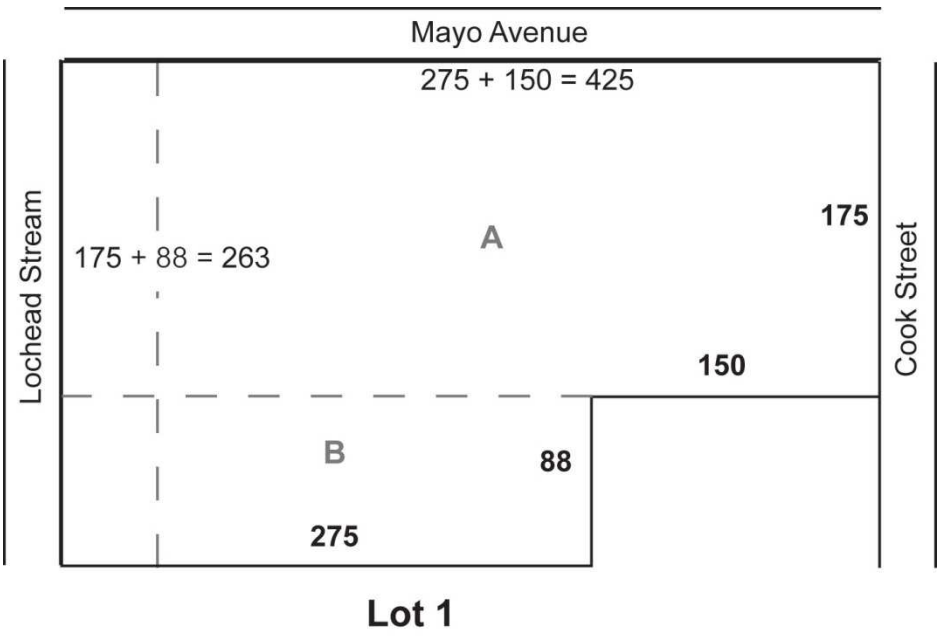
Area = A + B + C
A = (500’ x 500’)/2 = 250,000/2 = 125,000 sq ft
B = 500’ x 1,000’ = 500,000 sq ft
C = 900’ x 500’ = 450,000 sq ft
Area = 125,000 + 500,000 + 450,000 = <u>1,075,000 sq ft</u> = 1,075,000/43,560 = <u>24.68 acres</u>



4. What is the area of the above parcel if the circular portion of the parcel is a semi-circle? (Scale: 1" = 300)

Area = A + B + C; if height = 600' = semicircle diameter, the radius of the semicircle = 300'
A = (πr^2)/2 = (3.1416 x 300^2)/2 = (3.1416 x 90,000)/2 = 282,744/2 = 141,372 sq ft
B = 600' x 900' = 540,000 sq ft
C = (600' x 300')/2 = 180,000/2 = 90,000 sq ft
Area = 141,372 + 540,000 + 90,000 = 771,372 sq ft = 771,372/43,560 = 17.71 acres

5. Lot 1 is described as: beginning at a point on the west side of Cook Street, 175 feet south of the intersection of Cook Street and Mayo Avenue, thence at right angles westerly 150 feet to a point thence 88 feet due south to a large maple tree, thence 275 feet in westerly direction to the east bank of Lochead Stream, thence following the east bank of said stream northerly (assumed to be a straight line) to the bridge over said stream on Mayo Avenue thence following Mayo Avenue easterly to Cook Street and following Cook Street to the point of beginning.



FIND:

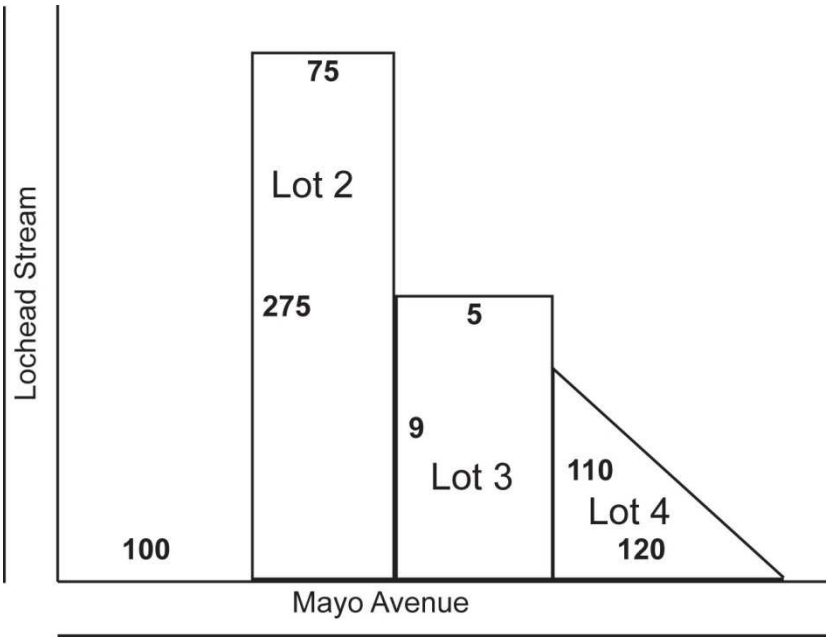
a. Number of front feet on Cook Street: 175 feet

b. Number of front feet on Mayo Avenue: 275 + 150 = 425 feet

c. Acreage of Lot 1:
Area = A + B
A = (175' x 425') = 72,812 sq ft
B = 88' x 291' = 26,481 sq ft
Area = 72,812 + 26,481 = 98,575 sq ft = 98,575/43,560 = 2.26 acres

d. Number of front feet on Lochead Stream: 175 + 88 = 263 feet

e. Plot a reserved strip on east side of Lochead Stream 50 feet wide extending the length of the westerly boundary of this lot.



6. Lot 2 is described as: beginning at a point on the north side of Mayo Avenue 100 feet east of Lochead Stream thence due north 275 feet, thence at a right angle in an easterly direction 75 feet to a point, thence due south to Mayo Avenue and following Mayo Avenue to the point of beginning.

   FIND:

   a. Number of front feet on Mayo Avenue: 75 feet

   b. Area of Lot 2 in square feet and acres:
      Area(Lot 2) = 275' x 75' = 20,625 sq ft = 20,625/43,560 = 0.47 acres

7. Lot 3 is described as: beginning at the southeast corner of Lot 2, thence north along the east line of said Lot 2, 9 rods to a point, thence parallel with Mayo Avenue in an easterly direction 5.5 rods, thence parallel with the first mentioned boundary to the street and thence westerly to the point of beginning.

   FIND:

   a. Area of Lot 3 in square rods:
      Area(Lot 3) = 9 rods x 5 rods = 45 square rods

   b. Area of Lot 3 in acres:
      1 acre = 160 square rods; 45 square rods = 45/160 = 0.28 acres

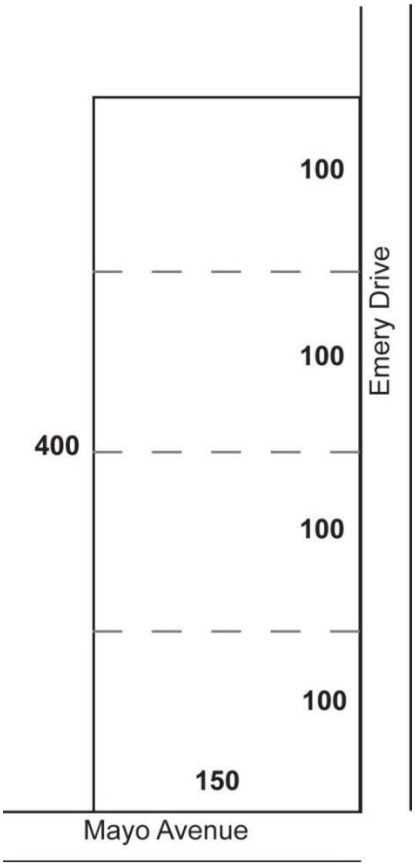
c. Number of feet on Mayo Avenue: 82.5 feet

8. Plot a triangular lot (Lot 4) whose boundaries are 120 feet on Mayo Avenue and 110 feet bordering Lot 3.

a. Find the area of Lot 4 in square feet:
Area(Lot 4) = (120' x 110')/2 = 6,600 sq ft

in acres:
6,600/43,560 = 0.15 acres

9. Plot the following subdivision: beginning at the corner of Mayo Avenue and Emery Drive, thence north in 100' intervals for 400' thence west at a right angle 150', thence southerly parallel with Emery Drive to Mayo Avenue, thence easterly to the point of beginning. Each lot will have 100' of frontage on Emery Drive and be 150' deep

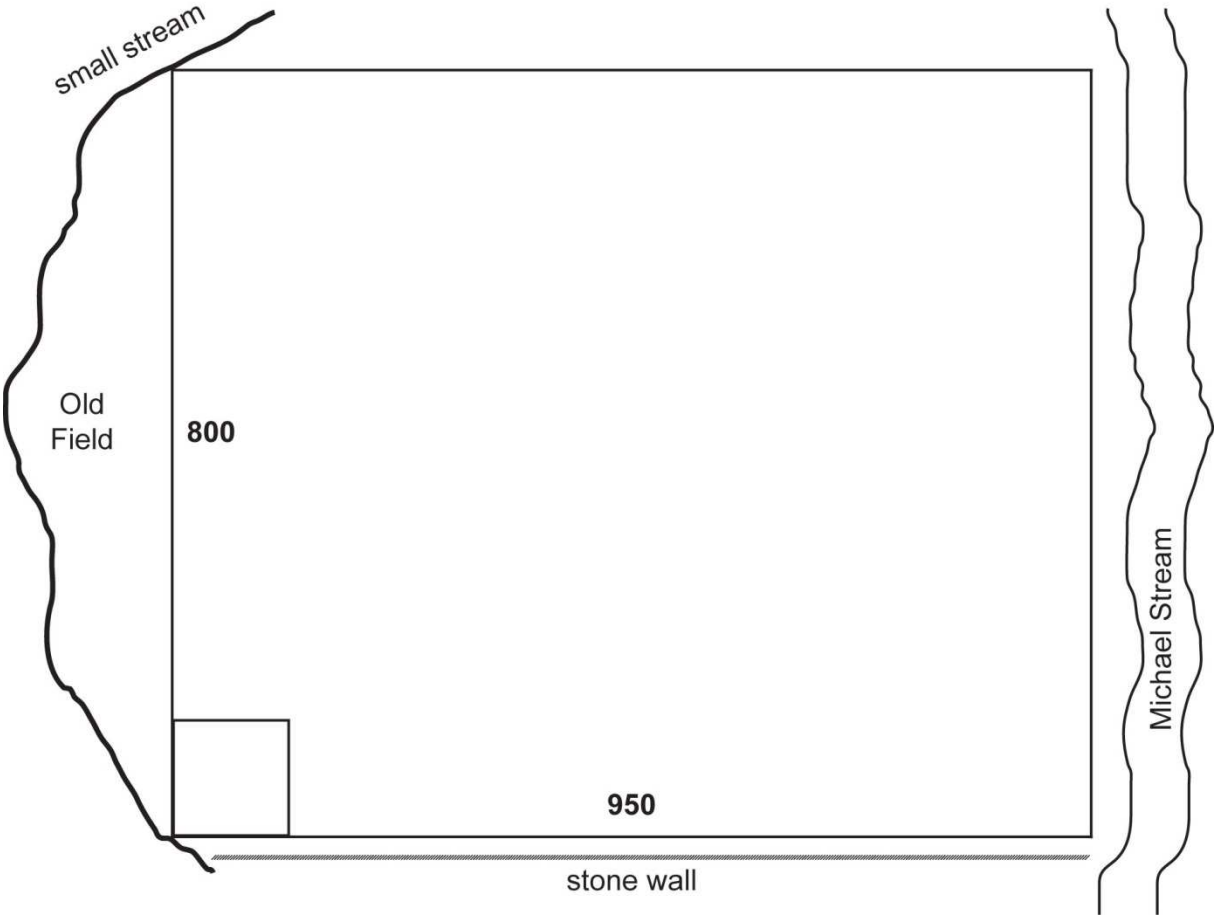


Find the area of one of these lots, in acres:
Area(single lot) = 150' x 100' = 15,000 sq ft = 15,000/43,560 = 0.34 acres

If someone needs 1/3 of an acre to build a home, can they build on one of these lots?

Yes (1/3 acre = 0.33 acre)

10. Plot the following: beginning at a point on the west bank of Michael Stream where an old stone wall ends near the stream. Following the stone wall 950 feet west to the intersection of the stone wall and a small brook; thence 800 feet north along an old field to the easterly side of the same small brook; thence easterly to Michael Stream, thence following Michael stream south to the point of beginning. Excluded from the property is a 900 square foot parcel in the southwest corner.



a. Find the area of this parcel, in acres:
Area = (800' x 950') – 900 sq ft = 760,000 – 900 = 759,100 sq ft
= 759,100/43560 = 17.43 acres

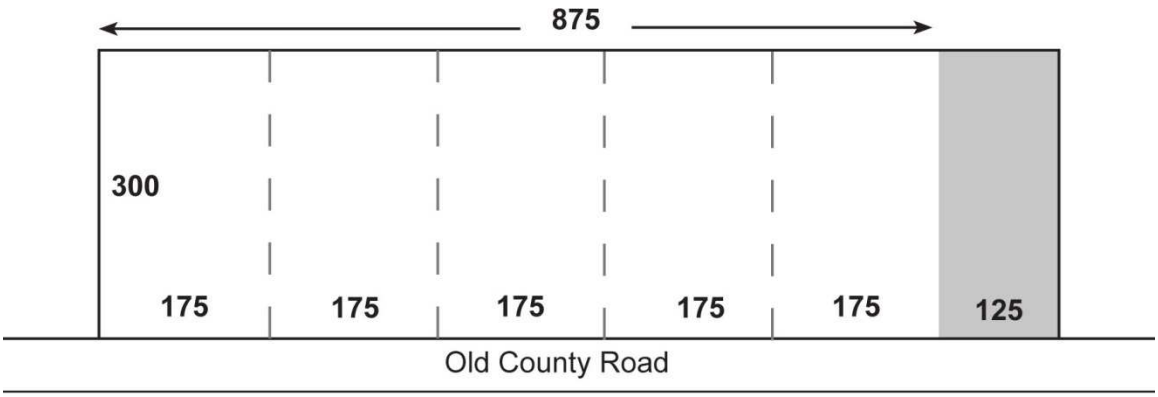
b. Number of feet along Michael Stream: 800’

11. Draw a parcel of five lots along the north side of Old County Road each, with 200 feet of road frontage and 300 feet deep.

a. Find the area of the five lots, in square feet:
Area(parcel) = 300’ x 1,000’ = 300,000 sq ft

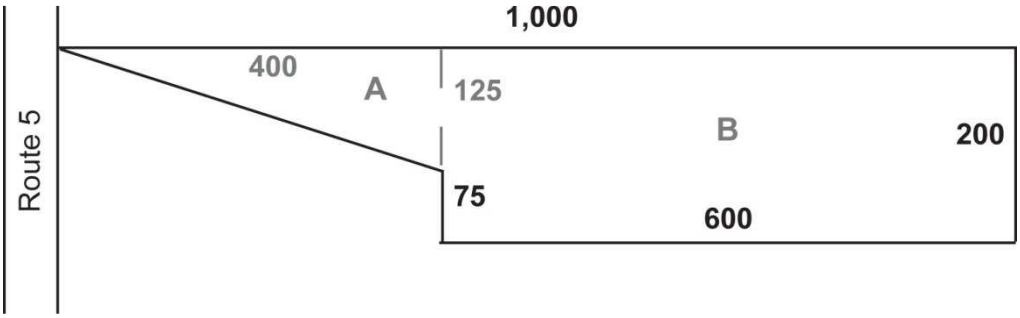
in acres? 300,000/43,560 = 6.89 acres

b. Plot a 125’ border strip on the east side of this parcel and adjust the road frontage for each lot so that all lots are the same size.



Find the acreage of conveyed single lot:
Area(lot) = 300’ x 175’ = 52,500 sq ft
= 52,500/43,560 = 1.21 acres

12. Beginning at a point on Route 5; thence east 1,000 feet; thence south 200 feet; thence 600 feet west; thence north 75 feet; thence to the point of beginning.



Find the area of this lot, in acres:

Area = A + B
A = (125’ x 400’)/2 = 25,000 sq ft
B = 200’ x 600’ = 120,000 sq ft
Area = 25,000 + 120,000 = 145,000 sq ft = 145,000/43,560 = 3.33 acres

Chapter 5 Class Quiz Answers

1. You are an assessor and you have committed taxes to the tax collector. The bills are sent out one month after the date of commitment. How long does a taxpayer have to request an abatement of their taxes:

   A. 185 days from receipt of the bill
   B. One year from the date of the tax bill
   C. 185 days from the date of commitment
   D. One year from the date of the tax bill.

2. Personal property of a resident of Maine, regardless of where that property is located:

   A. Is generally taxed by the municipality in which the property is located
   B. Is generally taxed by the municipality where the owner resides
   C. Is only taxed if located in the municipality where the owner lives
   D. Is only taxed if located in town on April 1

3. The church exemption applies:

   A. To the sanctuary only
   B. To all lands belonging to the church organization
   C. To all property used for religious purposes
   D. None of the above

4. Poverty abatements must be granted by assessors within three years of commitment. T F

5. A taxpayer has 60 days from a denial of the assessors of an abatement to file an appeal with the appropriate authority. T F

6. All valuation abatements may be made voluntarily by the assessor within one year of commitment. T F

7. If a taxpayer's land is less than that shown on his or her tax bill, he or she may apply for an abatement due to error or mistake. T F

Chapter 6 Class Quiz Answers

Fractions

1. Arrange the following, largest to smallest:

   a. 3/4 b. 5/8 c. 25/32 d. 13/16

   Convert so all fractions have the same denominator. a. 3/4 x 8/8 = 24/32; b. 5/8 x 4/4 = 20/32; c. 25/32; d. 13/16 x 2/2 = 26/32.

   d *c* *a* *b*

2. Add or subtract each of the following and reduce each to its simplest form:

   a. 1/2 + 5/8 = *4/8 + 5/8 = 9/8 = 1 1/8* b. 3/4 + 3/8 = *6/8 + 3/8 = 9/8 = 1 1/8*

   c. 5/8 - 3/16 = *10/16 – 3/16 = 7/16* d. 15/16 - 3/4 = *15/16 – 12/16 = 3/16*

3. For each of the following, state whether divisible by 2, 3, 4, or 5. A number may be divisible by more than one.

   a. 615 *3, 5* b. 42 *2, 3* c. 243 *3* d. 71 *none*

4. Multiply each of the following and reduce to its simplest form:

   a. 3/8 x 5/4 = *(3 x 5)/(8 x 4) = 15/32* b. 1/2 x 7/16 = *(1 x 7)/(2 x 16) = 7/32*

   c. 3 1/2 x 4 1/2 = *7/2 x 9/2 = (7 x 9)/(2 x 2) = 63/4 = 15 3/4*

   d. 3 x 3 1/2 = *3/1 x 7/2 = (3 x 7)/(1 x 2) = 21/2 = 10 1/2*

5. Divide each of the following and reduce to its simplest form:

   a. 3 1/2 ÷ 2 = *7/2 ÷ 2/1 = 7/2 x 1/2 = (7 x 1)/(2 x 2) = 7/4 1 3/4*

   b. 1/2 ÷ 3/5 = *1/2 x 5/3 = (1 x 5)/(2 x 3) = 5/6*

   c. 3 ÷ 3/8 = *3/1 x 8/3 = (3 x 8)/(1 x 3) = 24/3 = 8*

   d. 3/8 ÷ 1/2 = *3/8 x 2/1 = (3 x 2)/(8 x 1) = 6/8 = 3/4*

e. 5/8 ÷ 3/8 = *5/8 x 8/3 = (5 x 8)/(8 x 3) = 40/24 = 1 16/24 = 1 2/3*

Decimals

1. Write one hundred twenty five thousandths as a decimal: *0.125*

2. 1.375 + 0.625 + 12.125 =

```
 01.375
+00.625
+12.125
= 14.125
```

3. 0.625 x 12.5 =

```
  625
x  125
 3125
1250
625
78125 = 7.8125
```

4. Divide: 0.375 ÷ 0.05:

```
   7.5
50 | 375
     350
      250
```

5. State 5/8 as a decimal:

```
  0.625
8 | 5
    50
    48
     20
     16
      40
```

6. State 0.375 as a fraction: *375/1000 = 75/200 = 15/40 = 3/8*

7. State 1.25 as a percentage: *125%*

8. State 52.5% as a decimal: *0.525*

9. State 37.5% as a fraction: *375/1000 = 75/200 = 15/40 = 3/8*

10. State 5/8 as percent:

```
  0.625
8 | 5
    50
    48
```

20
16
40

Percentages

1. What is 22.5% of 20,000? *0.225 x 20,000 = 4,500*

2. 1,200 is what percent of 24,000? *y x 24,000 = 1,200; y = 1,200/24,000 = .05 = 5%*

3. A structure has depreciated 25%. Compute the depreciation if the replacement cost of the building is $18,600.

   $18,600 x 0.25 = $4,650

4. A dwelling has a replacement cost of $24,500. The replacement cost less depreciation of the building was $20,825. In what percent condition is the structure?

   $20,825/$24,500 = 0.85 = 85%

5. A structure has depreciated $1,850. The replacement cost less depreciation of the building is $16,650. What is the percentage of depreciation?

   replacement cost = $16,650 + $1,850 = $18,500; depreciation = $1,850/$18,500 = 0.10 = 10%

Units of Measure

1. How many mills are there in 72½ cents? *72.5 x 10 mills/cent = 725*

2. $0.035 = *35* mills.

3. How many cubic yards of fill will it take to fill a hole 7½ feet deep, 2 yards long and 36 inches wide?

   (7.5/3) x 2 x (36/36) = 2.5 x 2 x 1 = 5

4. Forty square rods is what part of an acre? *(40sq rods x 272.25 sq ft/sq rod)/43,560 sq ft/ac = 0.25 = 25%*

5. 94½ cubic feet = *94.5 cf/27 cf/cy = 3.5* cubic yards.

6. A parking lot was computed to have 650 square yards of area. In the area parking lots are assessed at 25¢ per square foot for asphalting. What would the valuation be?

   $0.25/sq ft x 9 sq ft/sq yd x 650 sq yd = $1,462.50

7. 9 square yards = *9 sq yds x 9 sq ft/sq yd = 81* square feet.

8. 108,900 square feet = *108,900 sq ft/43,560 sq ft/ac = 2.5* acres.

9. 3 rods = *3 rods x 16.5 ft/rod = 49.5* feet.

10. 1,760 yards = *(1,760 yds x 3 ft/yd)/16.5 ft/rod = 320* rods.

Assessor Problems

1. Compute the following areas:

   a. A building 24 feet wide and 40 feet long.

      24 x 40 = 960 sq ft

   b. A porch 12 feet wide and 14 feet long.

      12 x 14 = 168 sq ft

   c. A garage 24 feet wide and 24 feet long.

      24 x 24 = 576 sq ft

   d. A square parcel of land 12 rods each side.

      12 rods x 16.5 ft/rod = 198 ft; 198 x 198 = 39,204 sq ft

   e. A triangular parcel of land with a base of 16 feet and an altitude of 12 feet.

      (16 x 12)/2 = 96 sq ft

2. Compute the cost of replacement less depreciation of a building whose adjusted cost of replacement is $8,750 and which is subject to further allowance of 10% for its old fashioned character and 20% for location.

Character adjustment = $8,750 – ($8,750 x 0.1) = $7,875
Location adjustment = $7,875 – ($7,875 x 0.2) = $6,300

3. Compute the area of a rectangular parcel of land 120 feet wide and 180 feet deep.

   120 x 180 = 21,600 sq ft

4. Compute the value of a parcel of land 120 feet wide and 180 feet deep that is rectangular in shape, if an adjacent parcel 40 feet wide and 180 feet deep sold for $1,500 and all land was selling for the same price whether in large or small sized lots.

   Value/sf of sold lot = $1,500/(40' x 180') = $1,500/7,200 sf = $0.21/sf
   Value of parcel = $0.21 x (120' x 180') = $0.21 x 21,600 = $4,536

   There is no need to calculate the price per square feet to more decimal places than a penny.